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INTRODUCTION

This report outlines the antiviral evaluations for thirty-five (35) ICBG plant extracts For Walter Reed Army Institute of Research by Southern Research Institute.

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MATERIAL AND METHODS

Test Material

The thirty-five (35) plant extracts were received in vials containing 20 mg of dried powder. The extracts were solubilized in DMSO at 40 mg/mL and stored at -20°C until assay. No abnormal occurrences were noted upon solvation.

CEM-SS HIV-1_{Rf} Cytoprotection Assay:

CEM-SS cells (obtained from the AIDS Research and Reference Reagent Repository, Bethesda, MD) are passaged in T-75 flasks in tissue culture media (RPMI 1640 medium (no phenol red) with 10% Fetal Bovine Serum (heat inactivated), 2 mM L-glutamine, 100 U/mL penicillin, 100 µg/mL streptomycin , and 10 µg/mL gentamycin). On the day preceding the assay, the cells are split 1:2 to assure they are in an exponential growth phase at time of infection. On the day of assay the cells are collected by centrifugation, washed twice with tissue culture medium and resuspended at 5×10^4 cells per mL and resuspended in fresh tissue culture medium. Total cell and viability counting is performed using a hemacytometer. Cell viability prior to the assay is determined by Trypan Blue dye exclusion and must exceed 95%. A pretitered aliquot of HIV-1_{Rf} (AIDS Research and Reference Reagent Repository, Bethesda, MD), 5×10^3 cells and compound where appropriate are placed into 0.2 cm round bottom microtiter plates (final volume 200 µL). Each plate contains cell control wells (cells only), virus control wells (cells plus virus), drug toxicity control wells (cells plus drug only), drug colorimetric control wells (drug only) as well as experimental wells (drug plus cells plus virus) (**Figure 1**). Cultures are incubated for 6 days at 37°C, 5% CO₂ and antiviral activity and compound toxicity determined by MTS staining. Activity is confirmed by both macroscopic and microscopic analysis of the assay. Please note this assay was originally identified as the XTT

cytoprotection assay. The assays are identical except for the use of the MTS reagent in place of XTT for detection of cell viability.

Figure 1: Plate Layout for the HIV Cytoprotection Assay

	1	2	3	4	5	6	7	8	9	10	11	12
A	Media	Media	Media	Media	Media	Media	Blank	Blank	Blank	Blank	Blank	Blank
B	Cells + Drug 1 0.32 μ M	Cell Control	Cells + Virus + Drug 1 0.32 μ M		Cells + Drug 1 0.32 μ M	Cells + Drug 2 0.32 μ M	Cells + Virus + Drug 2 0.32 μ M		Cell Control	Cells + Drug 2 0.32 μ M		
C	Cells + Drug 1 1 μ M	Cell Control	Cells + Virus + Drug 1 1 μ M		Cells + Drug 1 1 μ M	Cells + Drug 2 1 μ M	Cells + Virus + Drug 2 1 μ M		Cell Control	Cells + Drug 2 1 μ M		
D	Cells + Drug 1 3.2 μ M	Cell Control	Cells + Virus + Drug 1 3.2 μ M		Cells + Drug 1 3.2 μ M	Cells + Drug 2 3.2 μ M	Cells + Virus + Drug 2 3.2 μ M		Cell Control	Cells + Drug 2 3.2 μ M		
E	Cells + Drug 1 10 μ M	Virus Control	Cells + Virus + Drug 1 10 μ M		Cells + Drug 1 10 μ M	Cells + Drug 2 10 μ M	Cells + Virus + Drug 2 10 μ M		Virus Control	Cells + Drug 2 10 μ M		
F	Cells + Drug 1 32 μ M	Virus Control	Cells + Virus + Drug 1 32 μ M		Cells + Drug 1 32 μ M	Cells + Drug 2 32 μ M	Cells + Virus + Drug 2 32 μ M		Virus Control	Cells + Drug 2 32 μ M		
G	Cells + Drug 1 100 μ M	Virus Control	Cells + Virus + Drug 1 100 μ M		Cells + Drug 1 100 μ M	Cells + Drug 2 100 μ M	Cells + Virus + Drug 2 100 μ M		Virus Control	Cells + Drug 2 100 μ M		
H	Drug 1 100 μ M + Media	Drug 1 32 μ M + Media	Drug 1 10 μ M + Media	Drug 1 3.2 μ M + Media	Drug 1 1 μ M + Media	Drug 1 0.32 μ M + Media	Drug 2 100 μ M + Media	Drug 2 32 μ M + Media	Drug 2 10 μ M + Media	Drug 2 3.2 μ M + Media	Drug 2 1 μ M + Media	Drug 2 0.32 μ M + Media

MTS staining for cell viability:

At assay termination the assay plates were stained with the soluble tetrazolium-based dye MTS (CellTiter Reagent Promega) to determine cell viability and quantify compound toxicity. MTS is metabolized by the mitochondria enzymes of metabolically active cells to a soluble formazan product, allowing the rapid quantitative analysis cell viability and compound cytotoxicity. This reagent is a single stable solution that does not require preparation before use. At termination of the assay 20 μ L of MTS reagent is added per well. The wells are incubated overnight for the HIV cytoprotection assay at 37°C. Adhesive plate sealers were used in place of the lids, the sealed plate was inverted several times to mix the soluble formazan product and the plate was read spectrophotometrically at 490 nm with a Molecular Devices Vmax plate reader.

Data Analysis:

Using an in-house computer program, IC₅₀ (50%, inhibition of virus replication), TC₅₀ (50% reduction in cell viability) and a therapeutic index (TI, TC₅₀/IC₅₀) are provided. Raw data

for both antiviral activity and toxicity with a graphic representation of the data are provided in a printout summarizing the individual compound activity. We have provided AZT as a relevant positive control compounds for the individual assays.

RESULTS

The results of the antiviral evaluations for the compounds are summarized in **Table 1**. The raw data for each compound is included in **Appendix I** as a single page plate report. Antiviral data in the appendices for each test includes the relevant raw data values from the triplicate tests for virus replication and cell viability (OD 490) using MTS dye reduction. The IC₅₀ and TC₅₀ values are calculated by linear regression using a program developed specifically for this purpose at Southern Research Institute. The IC₅₀ represents the compound concentration which suppresses virus replication by 50%, and the TC₅₀ represents the compound concentration which results in 50% cytotoxicity. The TI represents the ratio of the TC₅₀/IC₅₀, and is used to determine relative potency between compounds. Compounds with a TI less than 2 are graded as inactive, 2<TI<5 are moderately active and TI>5 are active. The graphical representation shows the relationship between antiviral efficacy (%VC) and compound toxicity (%CC) expressed as a percent of the control, virus no compound or cells no compound, respectively.

It is important to note that initial antiviral evaluations of crude plant extracts rarely identify compounds with significant antiviral activity, since the antiviral moiety is usually a minor component of the total extract. In this case it is often helpful to use the IC₂₅ (concentration inhibiting virus replication by 25%) to aid in identifying extracts with potentially active components. The relationship between the %VC and %CC curves can be further used to define extracts of interest.

The assays performed meet our internal validation and standardization criteria. For successful antiviral assays AZT must demonstrate an IC₅₀ between 1 and 10 nM without toxicity at the high test concentration of 4 µM. The assays used to evaluate the plant extracts meet the individual assay standards and other internal assay validation criteria including intra-triplicate

variation and total virus replication. Thus, we consider the presented evaluations to be valid and representative of the antiviral activity of the tested extracts.

Table 1 summarizes the results of the testing of the 35 ICBG plant extracts in the HIV cytoprotection assay, and **Table 2** summarizes compounds which reached an IC₂₅. Only compounds 1948 and 1961 demonstrated a TI greater than 2.0. Closer examination of the antiviral efficacy in both cases shows that antiviral activity is limited by compound toxicity, with complete protection prevented by increasing compound toxicity. Re-examination of the data using IC₂₅ values to identify plant extracts with potential antiviral activity yielded 6 more extracts which inhibited HIV replication sufficiently to produce an IC₂₅ (**Table 2**). Of the 6 extracts all extracts except 1960 have their antiviral activity limited by compound cytotoxicity. Although extract 1960 is non-toxic at 200 µg/mL the abnormal shape of its antiviral efficacy curve raises doubts as to whether the observed protection is inhibition of virus replication or a cell-based effect and/or artifact. Extracts 1921 and 1959 are considered, based on the positioning of their antiviral efficacy and toxicity curves, to be the best lead compounds of the IC₂₅ group. Of the 35 extracts tested only extracts 1904, 1924, 1958, 1960 and 1965 were non-toxic to CEM-SS cells at the high test concentration of 200 µg/mL.

DISCUSSION

We have analyzed thirty-five (35) ICBG plant extracts for anti-HIV activity in the HIV cytoprotection assay. This assay measures the ability of compounds to prevent the replication of the highly cytopathic Rf strain of HIV in the T-lymphoblastic cell line CEM-SS. Antiviral activity is evidenced by increased growth and viability of the cells following inhibition of virus replication. Two of the extracts (1948 and 1961) tested displayed antiviral activity which approached the level of marginal activity (2 < TI < 5) while 6 more of the extracts reached an IC₂₅. Further analysis of the extracts with IC₂₅s identified extracts 1921 and 1959 as the best lead extracts based upon the positioning of the antiviral efficacy and extract toxicity curves.

In general the extracts tested were cytotoxic to CEM-SS cells with extracts 1930 and 1914 being the most potent with TC₅₀s in the 1 µg/ml range. Only 4 of the 35 extracts lacked any effect on

CEM-SS cell growth. Examination of the antiviral activity displayed by the four highlighted extracts (1948, 1961, 1921 and 1959) shows that for all four extracts cytotoxicity and antiviral activity were expressed in parallel. Thus these extracts will require further fractionation and/or purification to determine if antiviral activity is independent of cytotoxic constituents in the extracts.

TABLE 1 SUMMARY OF HIV CYTOPROTECTION RESULTS

Compound	IC ₅₀ (µg/ml)	TC ₅₀ (µg/ml)	Therapeutic Index
AZT (µM)	0.004	>1.0	>250.0
1904	>200	200.0	---
1909	>200	0.02	---
1910	>200	121.0	---
1911	>200	4.7	---
1912	>200	77.2	---
1914	>200	1.3	---
1915	>200	12.8	---
1916	>200	37.5	---
1917	>200	38.7	---
1918	>200	124.0	---
1919	>200	39.4	---
1920	>200	25.2	---
1921	>200	42.2	---
1923	>200	11.6	---
1924	>200	>200	---
1925	>200	42.4	---
1927	>200	52.7	---
1929	>200	0.003	---
1930	>200	1.6	---
1932	>200	101.0	---
1933	>200	169.0	---
1936	>200	60.9	---
1946	>200	131.0	---
1948	14.2	38.6	2.7
1953	>200	38.4	---
1956	>200	123.0	---
1957	>200	3.2	---
1958	>200	>200	---
1959	>200	44.4	---
1960	>200	>200	---
1961	17.6	45.3	2.6
1962	>200	41.5	---

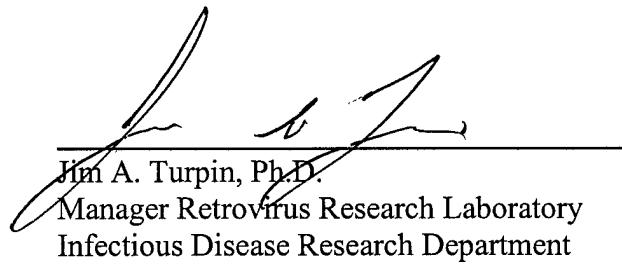
Compound	IC₅₀ (μg/ml)	TC₅₀ (μg/ml)	Therapeutic Index
1963	>200	21.4	---
1964	>200	4.5	---
1965	>200	>200	---

TABLE 2: SUMMARY OF COMPOUNDS BASED ON IC₂₅ VALUES

Compound	IC₂₅ (μg/ml)	TC₂₅ (μg/ml)	Therapeutic Index
AZT (μ M)	0.002	>1.0	>599.4
1921	17.7	25.9	1.5
1930	3.4	<0.63	<0.19
1932	53.4	52.6	0.98
1948	9.4	26.7	2.8
1959	5.0	1.9	0.38
1960	1.3	>200	>153.8
1961	10.3	32.6	3.2
1963	15.4	4.9	0.32

October 6, 2000

Submitted By:



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Manager Retrovirus Research Laboratory
Infectious Disease Research Department

REPORT SRF-00-9935- DAMD17-00-2-003

APPENDIX I

HIV Cytoprotection Assay Results

PLATE RFP
DRUG AZTIN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- AZT
SI: >450.57

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.438	0.411	0.444	0.447	0.438	0.468	0.057	0.058	0.058	0.061	0.063	0.063
tox	cc/vc		experimental - high concentrations		tox		tox	experimental - low concentrations		cc/vc		tox
B	1.598	1.650	1.002	1.133	1.780	1.799	1.939	1.031	0.788	0.729	1.585	1.944
C	1.723	1.718	1.428	1.585	1.768	1.588	1.722	1.031	0.788	0.729	1.612	1.828
D	1.422	1.576	1.467	1.504	1.564	1.661	1.694	0.727	0.683	0.765	1.607	1.486
E	1.657	0.728	1.844	1.740	1.706	1.676	1.741	0.736	0.722	1.331	0.759	1.577
F	1.658	0.756	1.801	1.855	1.875	1.793	1.738	0.795	0.807	0.926	0.737	1.652
G	1.568	0.631	1.799	1.689	1.752	1.648	1.571	0.779	0.726	0.970	0.642	1.635
colorimetric background - high concentrations												
H	0.480	0.448	0.466	0.436	0.420	0.442	0.438	0.412	0.431	0.436	0.447	0.447
tox=cell toxicity	cc=cell control	vc=virus control					BOLD = highest drug conc					
values shown are optical densities												

VIRUS

HIV1 PASSAGE --

PROJECT # --

CELLS

CEMSS PASSAGE --

SPONSOR

WALTERREED

SHIPMENT NUMBER

-- OPERATOR 12S

TEST DATE

08/01/00

STRN

RF

DATE READ

08/01/00

REAGENT

0.441

DRUG AZT

25%

50%

95%

VIRUS CONTROL

0.268

TC (nM)

> 1.0000000

> 1.0000000

> 1.0000000

CELL CONTROL

1.184

IC (nM)

0.0012100

0.0022200

0.0087500

DIFFERENTIAL

0.916

ANTIVIRAL INDEX (AI)

> 829.1345220

> 450.5734920

> 114.3451240

DRUG AZT		ANTIVIRAL TEST VALUES			CYTOTOXICITY TEST VALUES				
ROW ON PLATE	CONC. (nM)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC	- CONTROL		
BASED ON VALUES OF COLUMNS 7 through 12 (RIGHT SIDE OF PLATE)	LOW B	0.00281	0.135	15%	1.495	100%	0.006		
	C	0.009	0.135	15%	1.328	100%	0.006		
	D	0.028	0.021	2%	1.154	97%	-.005		
	E	0.09	0.231	25%	1.228	100%	-.010		
	F	0.281	0.163	18%	1.283	100%	-.029		
	G	0.9	0.119	13%	1.165	98%	-.003		
	B	3.2	0.595	65%	1.257	100%	0.001		
BASED ON VALUES OF COLUMNS 1 through 6 (LEFT SIDE OF PLATE)	C	10	0.906	99%	1.236	100%	-.021		
	D	32	0.808	88%	1.106	93%	-.005		
	E	100	1.030	100%	1.201	100%	0.025		
	F	320	1.128	100%	1.278	100%	0.007		
	high G	1000	0.999	100%	1.128	95%	0.039		

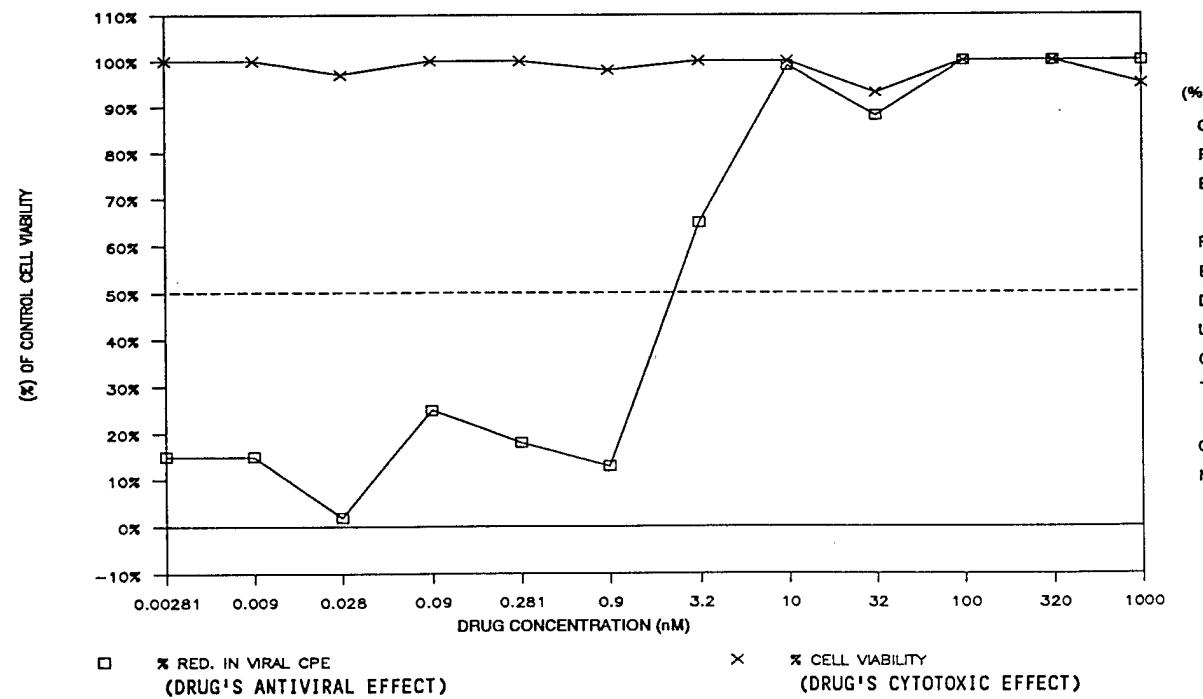
SUMMARY GRAPH
--- AZT vs. HIV1 (08/01/00)

PLATE RFQ
DRUG 1904IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1904
TAI: >7.44 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.412	0.407	0.427	0.426	0.418	0.451	0.054	0.058	0.056	0.059	0.061	0.063
	tox	cc/vc		drug 1904 experimental		tox					cc/vc	
B	1.615	1.646	1.395	0.735	0.810	1.661					1.542	
C	1.489	1.851	0.830	0.897	0.666	1.796					1.717	
D	1.733	1.839	0.769	0.663	0.792	1.822					1.665	
E	1.740	0.744	0.924	0.641	0.656	1.759					0.739	
F	1.453	0.730	0.465	0.722	0.460	1.496					0.720	
G	0.805	0.721	1.101	0.604	0.435	1.142					0.701	
colorimetric background												
H	0.335	0.349	0.360	0.367	0.378	0.372						

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.424	DRUG 1904	25%	50%
VIRUS CONTROL	0.302	TC (uG/mL)	110.00	200.00
CELL CONTROL	1.287	IC (uG/mL)	< 0.63	-----
DIFFERENTIAL	0.984	ANTIVIRAL INDEX (AI)	> 175.26	-----

DRUG 1904		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	0.305	31%	1.266	98%	-.051
C	2	0.117	12%	1.264	98%	-.045
D	6.25	0.072	7%	1.410	100%	-.056
E	20	0.079	8%	1.390	100%	-.064
F	62.5	-.102	0%	1.126	88%	-.075
high G	200	0.076	8%	0.638	50%	-.088

SUMMARY GRAPH

--- 1904 vs. HIV1 (08/01/00)

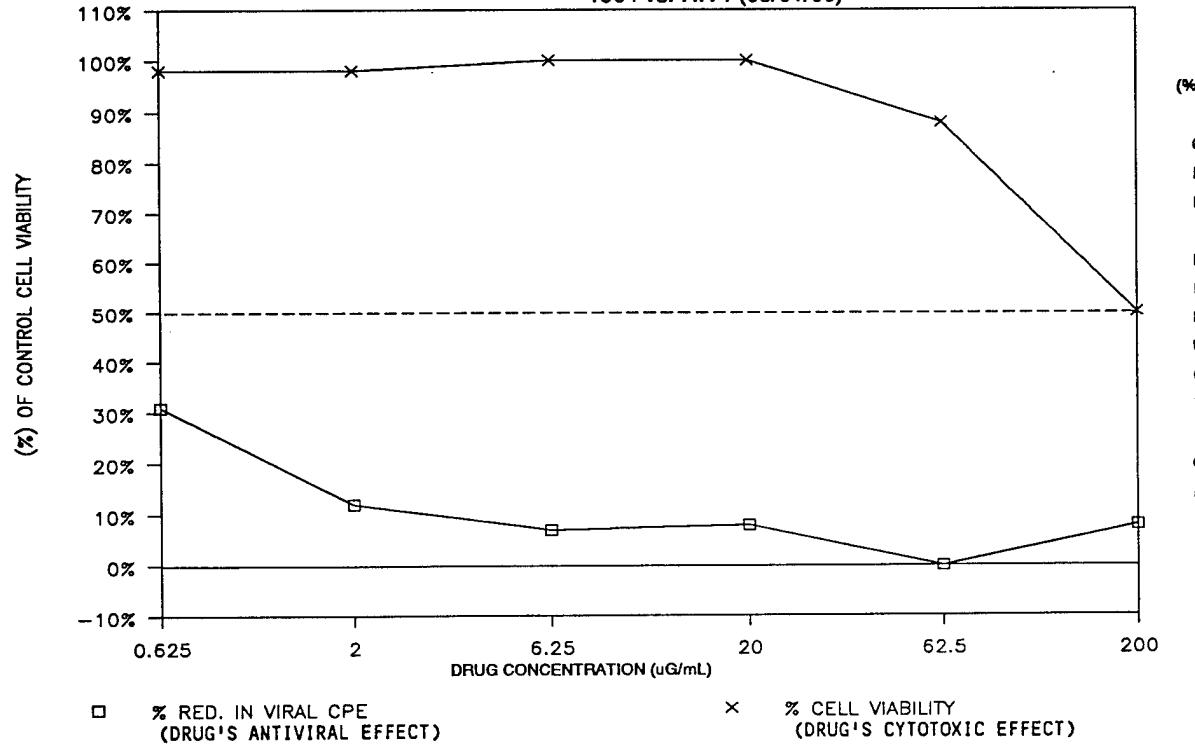


PLATE RFQ
DRUG 1909IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1909
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
	reagent background						plastic background					
A	0.412	0.407	0.427	0.426	0.418	0.451	0.054	0.058	0.056	0.059	0.061	0.063
B		cc/vc 1.646					tox 0.398	0.399	0.402	0.430	1.542	0.437
C		1.851					0.440	0.420	0.436	0.439	1.717	0.418
D		1.839					0.520	0.503	0.517	0.504	1.665	0.544
E		0.744					0.656	0.652	0.660	0.641	0.739	0.693
F		0.730					0.905	0.888	0.914	0.842	0.720	0.916
G		0.721					1.144	1.178	1.184	1.110	0.701	1.191
H							colorimetric background					
	tox=cell toxicity	cc=cell control	vc=virus control	BOLD = highest drug conc						values shown are optical densities		

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.424	DRUG 1909	25%	50%
VIRUS CONTROL	0.302	TC (uG/mL)	< 0.63	< 0.63
CELL CONTROL	1.287	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.984	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1909		ANTIVIRAL TEST VALUES			CYTOTOXICITY TEST VALUES			COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL		
low B	0.625	- .340	0%	- .030	0%	0.024		
C	2	- .292	0%	0.008	1%	-.002		
D	6.2	- .289	0%	0.038	3%	0.071		
E	20	- .281	0%	0.045	3%	0.206		
F	62.5	- .299	0%	0.033	3%	0.454		
high G	200	- .243	0%	0.070	5%	0.674		

SUMMARY GRAPH

--- 1909 vs. HIV1 (08/01/00)

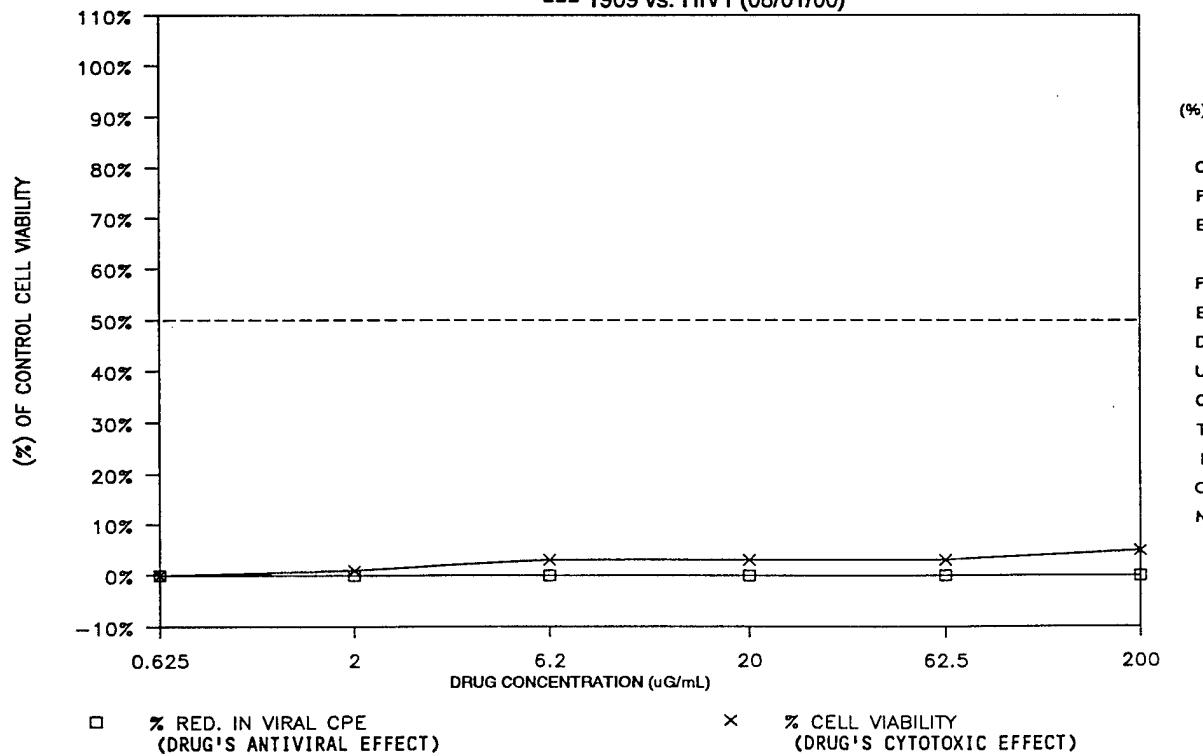


PLATE RFR
DRUG 1910IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1910
TAI: >0.75 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.431	0.419	0.411	0.433	0.419	0.429	0.046	0.051	0.048	0.052	0.053	0.053
tox	cc/vc			drug 1910 experimental		tox					cc/vc	
B	1.714	1.775	0.788	0.852	0.960	1.761					1.733	
C	1.970	1.824	0.838	0.849	0.780	1.908					1.950	
D	1.788	1.749	0.740	0.746	0.731	1.634					1.740	
E	1.968	0.788	0.768	0.822	0.757	2.070					0.825	
F	1.803	0.770	1.133	1.232	1.082	1.918					0.774	
G	1.093	0.880	1.061	1.075	1.037	1.007					0.714	
colorimetric background												
H	1.043	0.677	0.504	0.455	0.431	0.414						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.424	DRUG 1910	25%	50%
VIRUS CONTROL	0.368	TC (uG/mL)	80.30	121.00
CELL CONTROL	1.372	IC (uG/mL)	-----	-----
DIFFERENTIAL	1.003	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1910		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	0.085	8%	1.324	97%	-.010
C	2	0.023	2%	1.508	100%	0.007
D	6.25	-.084	0%	1.256	92%	0.031
E	20	-.090	0%	1.515	100%	0.080
F	62.5	0.104	10%	1.184	86%	0.253
high G	200	-.353	0%	0.007	1%	0.619

SUMMARY GRAPH

--- 1910 vs. HIV1 (08/01/00)

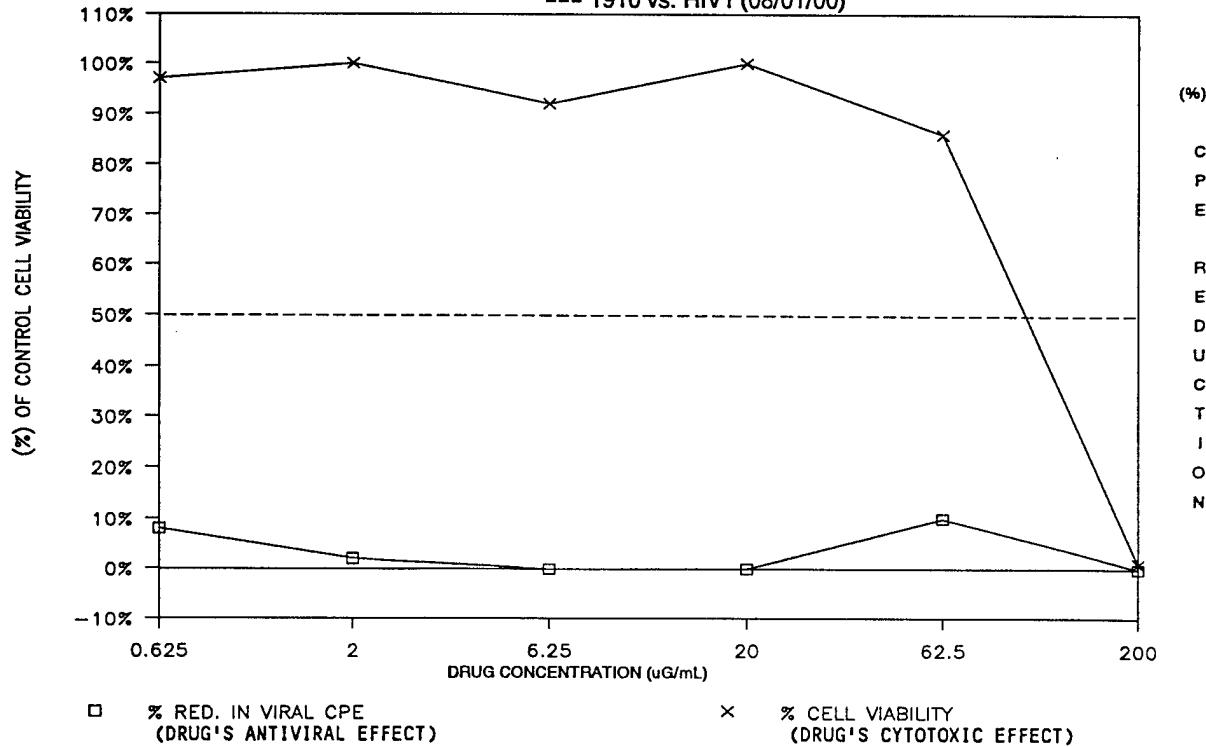


PLATE RFR
DRUG 1911IN VITRO ANTIVIRAL RESULTS
XTT ASSAYTAI: 1.11 SI: -----
DRUG: ---- 1911

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.431	0.419	0.411	0.433	0.419	0.429	0.046	0.051	0.048	0.052	0.053	0.053
B		cc/vc					tox	drug 1911 experimental			cc/vc	tox
B		1.775					1.730	0.744	0.758	0.822	1.733	1.643
C		1.824					1.969	0.907	1.098	0.937	1.950	1.990
D		1.749					0.690	0.590	0.583	0.628	1.740	0.951
E		0.788					0.673	0.649	0.611	0.648	0.825	0.663
F		0.770					1.051	1.009	0.955	0.954	0.774	0.962
G		0.880					1.371	1.335	1.333	1.321	0.714	1.147
H												
colorimetric background												
							1.347	0.966	0.582	0.535	0.464	0.462

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.424	DRUG 1911	25%	50%
VIRUS CONTROL	0.368	TC (μ G/mL)	3.34	4.69
CELL CONTROL	1.372	IC (μ G/mL)	-----	-----
DIFFERENTIAL	1.003	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1911		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (μ G/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	- .055	0%	1.225	89%	0.038
C	2	0.149	15%	1.516	100%	0.040
D	6.2	-.303	0%	0.286	21%	0.111
E	20	-.314	0%	0.086	6%	0.158
F	62.5	-.361	0%	0.041	3%	0.542
high G	200	-.385	0%	-.088	0%	0.923

SUMMARY GRAPH

--- 1911 vs. HIV1 (08/01/00)

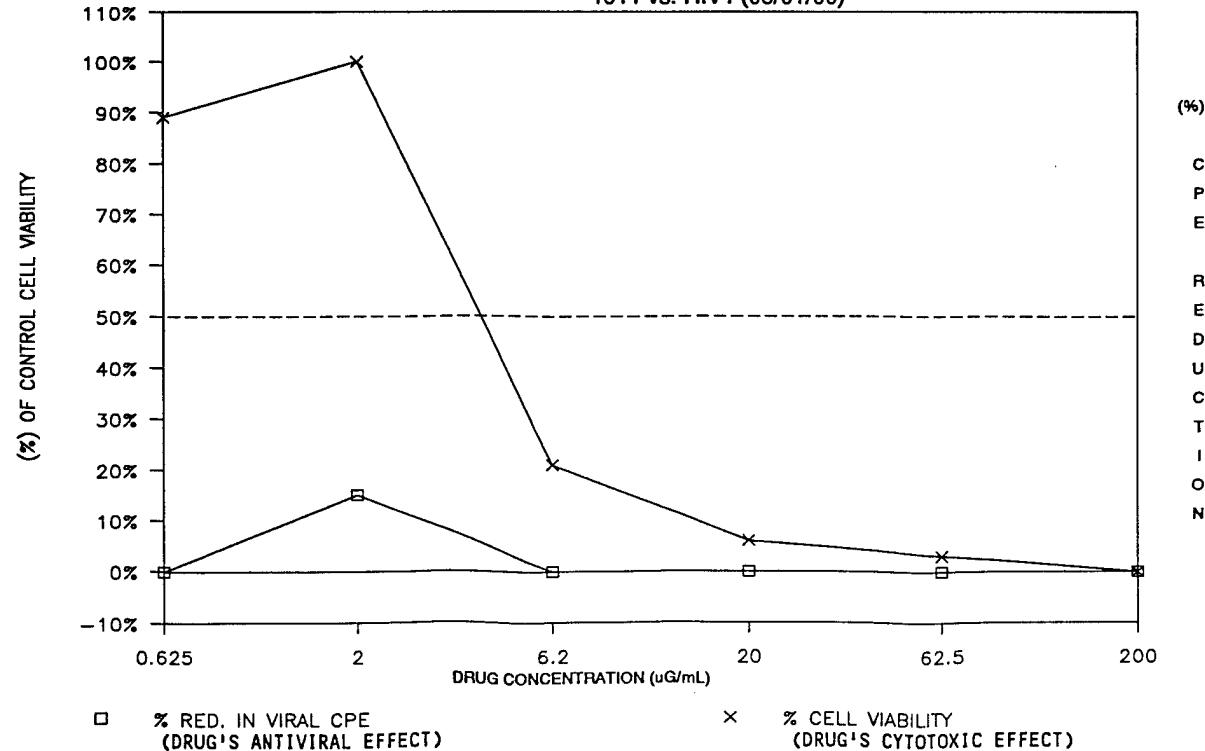


PLATE RFS
DRUG 1912IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1912
TAI: >1.78 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.434	0.394	0.417	0.411	0.407	0.423	0.047	0.051	0.051	0.050	0.052	0.058
tox	cc/vc			drug 1912 experimental		tox					cc/vc	
B	1.895	1.827	0.689	0.735	0.790	1.720					1.585	
C	1.661	1.662	1.075	0.677	0.736	1.676					1.724	
D	1.649	1.718	0.908	0.711	0.611	1.668					1.703	
E	1.560	0.683	0.629	0.789	0.602	1.637					0.780	
F	1.139	0.648	0.588	0.885	0.626	1.200					0.622	
G	0.507	0.804	0.516	0.509	0.484	0.530					0.692	
colorimetric background												
H	0.535	0.450	0.427	0.429	0.415	0.428						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.414	DRUG 1912	25%	50%
VIRUS CONTROL	0.291	IC (uG/mL)	39.40	77.20
CELL CONTROL	1.289	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.998	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1912		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	0.019	2%	1.379	100%	0.014
C	2	0.123	12%	1.253	97%	0.001
D	6.25	0.023	2%	1.229	95%	0.015
E	20	-.045	0%	1.171	91%	0.013
F	62.5	-.041	0%	0.719	56%	0.036
high G	200	-.323	0%	-.017	0%	0.121

SUMMARY GRAPH

--- 1912 vs. HIV1 (08/01/00)

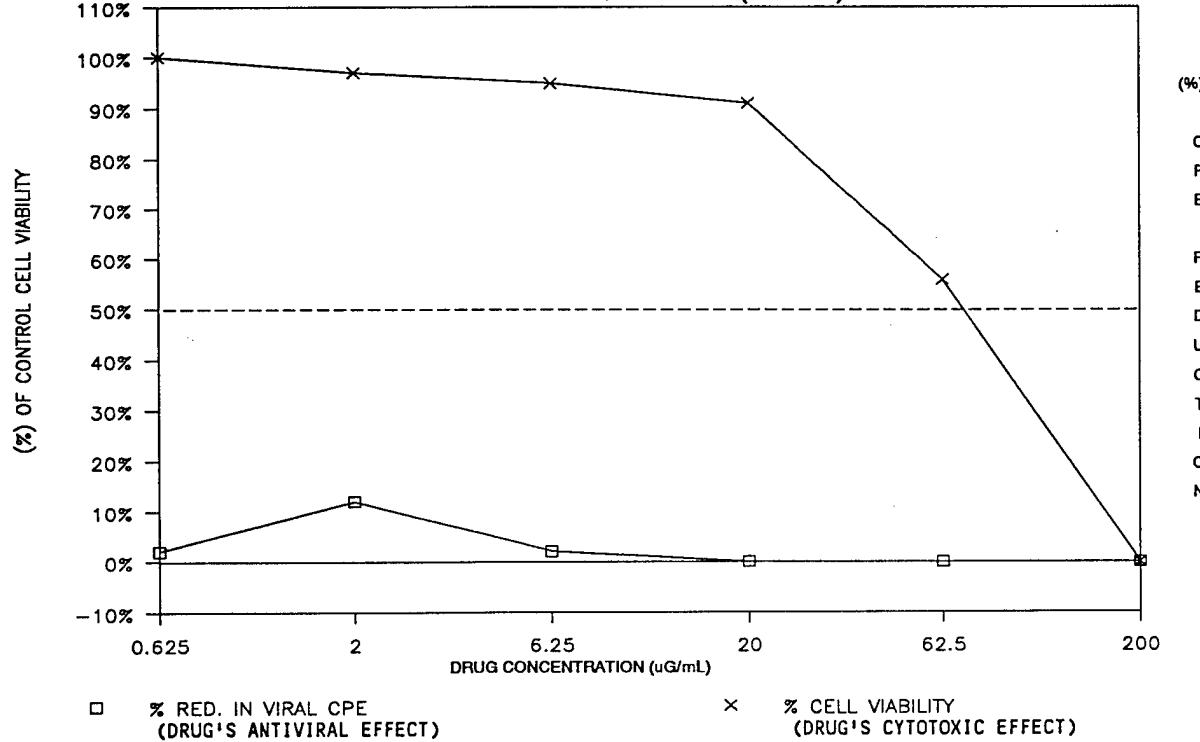


PLATE RFS

IN VITRO ANTIVIRAL RESULTS

DRUG 1914

XTT ASSAY

DRUG: --- 1914

TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12	
reagent background													
A	0.434	0.394	0.417	0.411	0.407	0.423	0.047	0.051	0.051	0.050	0.052	0.058	
B	cc/vc 1.827						tox 1.728	0.679	0.685	0.713	1.585	1.660	
C	1.662						0.441	0.382	0.383	0.399	1.724	0.469	
D	1.718						0.399	0.383	0.397	0.405	1.703	0.429	
E	0.683						0.397	0.393	0.391	0.414	0.780	0.433	
F	0.648						0.377	0.372	0.383	0.392	0.622	0.418	
G	0.804						0.390	0.390	0.400	0.404	0.692	0.425	
H													
	colorimetric background												
								0.402	0.428	0.414	0.421	0.430	0.454

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.414	DRUG 1914	25%	50%
VIRUS CONTROL	0.291	TC (uG/mL)	0.93	1.30
CELL CONTROL	1.289	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.998	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1914		ANTIVIRAL TEST VALUES			CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL		
low B	0.625	-.053	0%	1.240	96%	0.040		
C	2	-.333	0%	0.025	2%	0.016		
D	6.2	-.317	0%	-.007	0%	0.007		
E	20	-.306	0%	0.001	0%	0.000		
F	62.5	-.337	0%	-.031	0%	0.014		
high G	200	-.295	0%	0.005	0%	-.012		

SUMMARY GRAPH

--- 1914 vs. HIV1 (08/01/00)

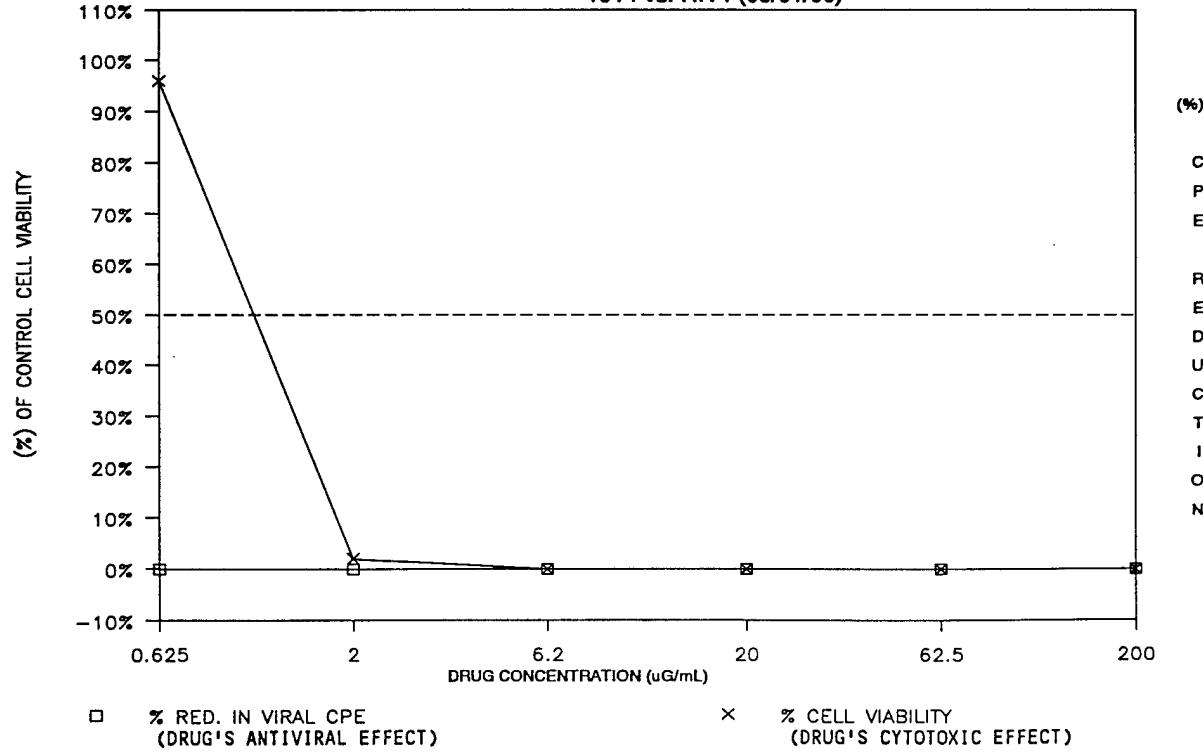


PLATE RFT
DRUG 1915IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1915
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.386	0.387	0.384	0.377	0.382	0.413	0.054	0.056	0.055	0.056	0.058	0.062
	tox	cc/vc	drug 1915 experimental			tox					cc/vc	
B	1.540	1.535	0.697	0.686	0.626	1.676					1.620	
C	1.557	1.554	0.593	0.685	0.753	1.611					1.549	
D	1.488	1.607	0.544	0.609	0.550	1.619					1.593	
E	0.469	0.724	0.423	0.487	0.426	0.447					0.709	
F	0.510	0.641	0.494	0.464	0.504	0.508					0.690	
G	0.769	0.682	0.788	0.776	0.707	0.675					0.635	
colorimetric background												
H	0.758	0.523	0.450	0.423	0.407	0.418						

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.388	DRUG 1915	25%	50%
VIRUS CONTROL	0.292	TC (uG/mL)	9.18	12.80
CELL CONTROL	1.188	TC (uG/mL)	-----	-----
DIFFERENTIAL	0.896	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1915		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	-.040	0%	1.190	100%	0.030
C	2	-.022	0%	1.177	99%	0.019
D	6.25	-.147	0%	1.130	95%	0.035
E	20	-.297	0%	0.008	1%	0.062
F	62.5	-.328	0%	-.014	0%	0.135
high G	200	-.293	0%	-.036	0%	0.370

SUMMARY GRAPH

--- 1915 vs. HIV1 (08/01/00)

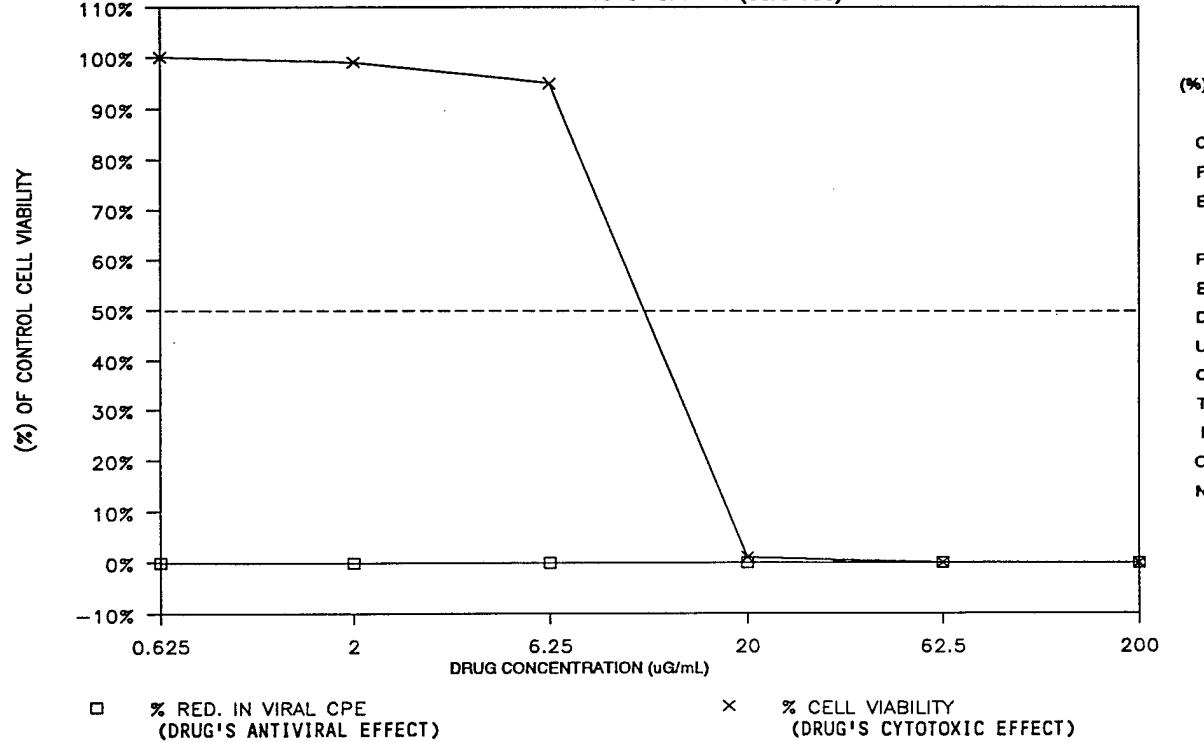


PLATE RFT
DRUG 1916IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1916
TAI: 2.91 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
			reagent background						plastic background			
A	0.386	0.387	0.384	0.377	0.382	0.413	0.054	0.056	0.055	0.056	0.058	0.062
B		cc/vc					tox		drug 1916 experimental		cc/vc	tox
B		1.535					1.558	0.630	0.750	0.720	1.620	1.541
C		1.554					1.535	0.660	0.602	0.695	1.549	1.562
D		1.607					1.619	1.550	0.585	0.610	1.593	1.645
E		0.724					1.245	0.580	0.633	0.556	0.709	1.658
F		0.641					0.495	0.474	0.462	0.471	0.690	0.505
G		0.682					0.662	0.633	0.614	0.618	0.635	0.628
H									colorimetric background			
									0.614	0.497	0.442	0.435
										0.416	0.448	

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.388	DRUG 1916	25%	50%
VIRUS CONTROL	0.292	TC (uG/mL)	25.00	37.50
CELL CONTROL	1.188	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.896	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1916		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	- .040	0%	1.101	93%	0.060	
C	2	- .056	0%	1.132	95%	0.028	
D	6.2	0.188	21%	1.197	100%	0.047	
E	20	- .144	0%	1.009	85%	0.054	
F	62.5	- .320	0%	0.003	0%	0.109	
high G	200	- .285	0%	0.031	3%	0.226	

SUMMARY GRAPH

--- 1916 vs. HIV1 (08/01/00)

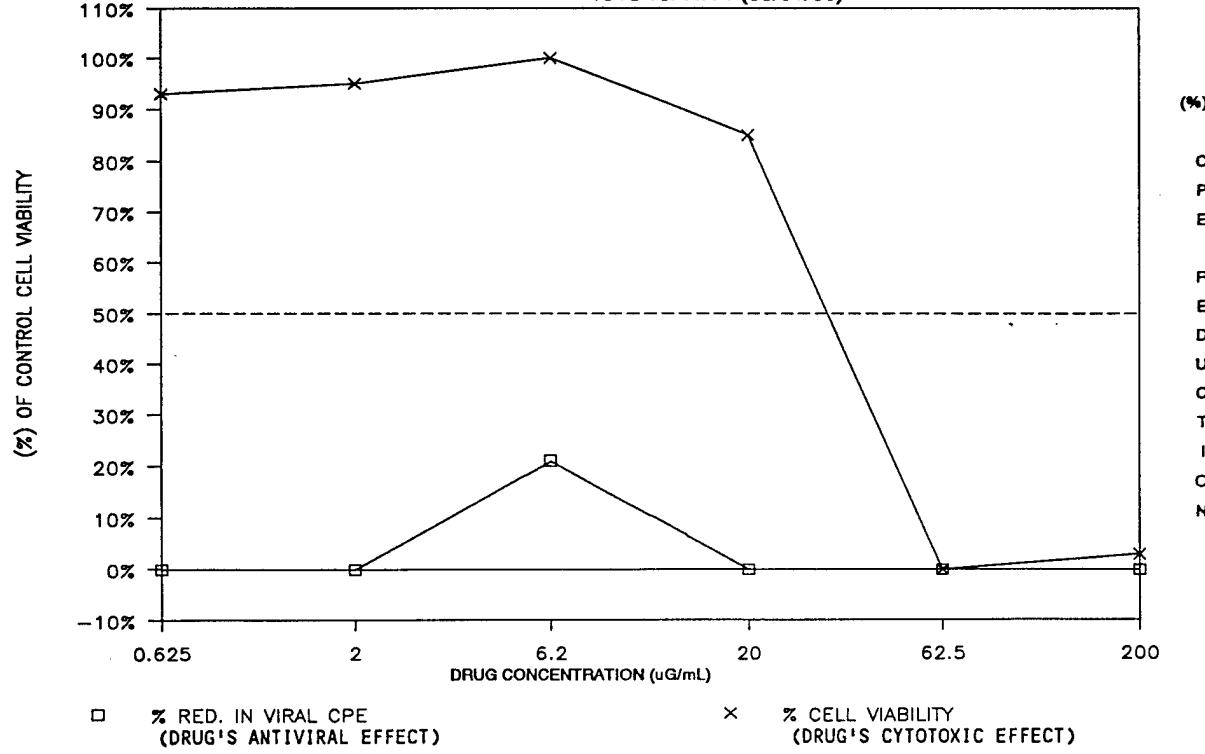


PLATE RFU

IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1917
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.419	0.345	0.390	0.390	0.393	0.404	0.063	0.068	0.068	0.069	0.071	0.071
tox	cc/vc	drug 1917 experimental		tox							cc/vc	
B	1.468	1.512	0.633	0.758	0.748	1.654					1.581	
C	1.410	1.530	0.611	0.657	0.699	1.599					1.577	
D	1.512	1.564	0.601	0.622	0.675	1.703					1.651	
E	1.245	1.113	0.521	0.511	0.565	1.481					0.684	
F	0.475	0.816	0.494	0.490	0.515	0.533					0.810	
G	0.438	0.711	0.415	0.417	0.394	0.428					0.775	
colorimetric background												
H	0.433	0.409	0.388	0.411	0.417	0.420						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.390	DRUG 1917	25%	50%
VIRUS CONTROL	0.428	TC (μ G/mL)	24.50	38.70
CELL CONTROL	1.179	IC (μ G/mL)	-----	-----
DIFFERENTIAL	0.751	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1917		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (μ G/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	-.135	0%	1.141	97%	0.030
C	2	-.190	0%	1.087	92%	0.027
D	6.25	-.207	0%	1.196	100%	0.021
E	20	-.284	0%	0.975	83%	-.002
F	62.5	-.338	0%	0.095	8%	0.019
high G	200	-.453	0%	0.000	0%	0.043

SUMMARY GRAPH

--- 1917 vs. HIV1 (08/01/00)

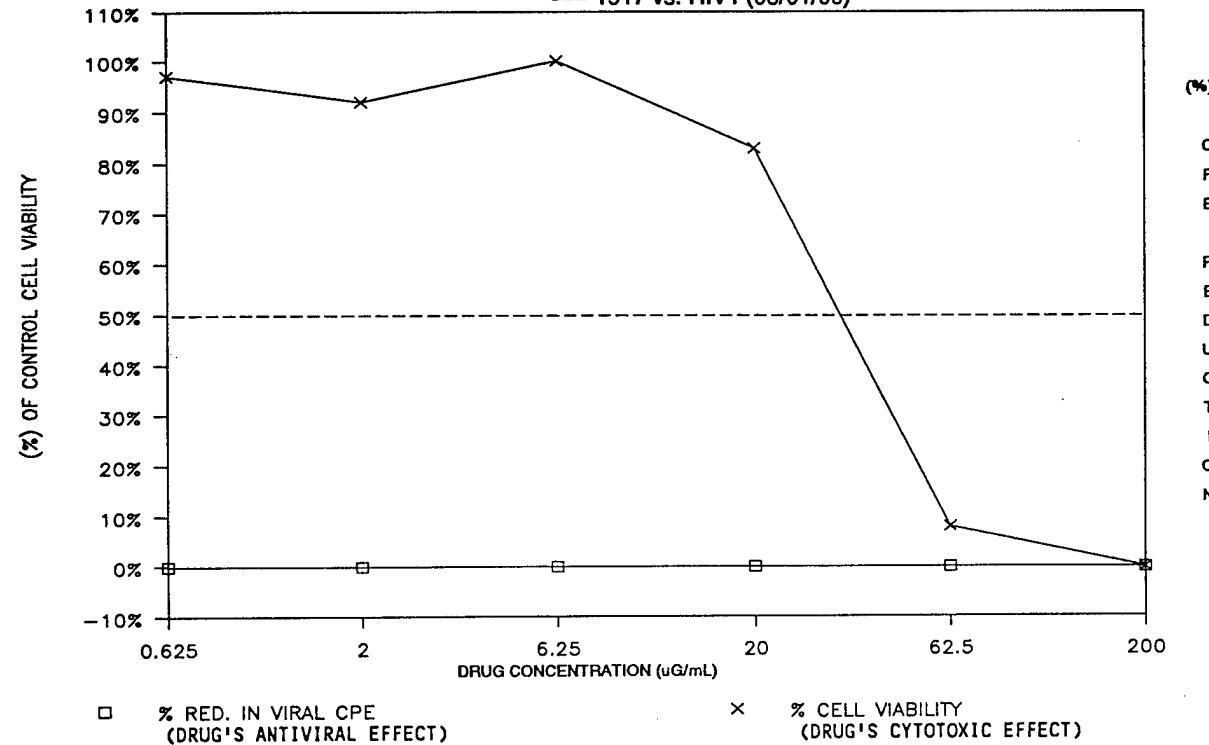


PLATE RFU
DRUG 1918IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1918
TAI: 5.49 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12	
A	0.419	0.345	reagent background 0.390	0.390	0.393	0.404	0.063	0.068	0.068	0.069	0.071	0.071	
B		cc/vc 1.512					tox	drug 1918 experimental		cc/vc	tox		
C		1.530					1.667	0.688	0.713	0.698	1.581	1.651	
D		1.564					1.507	0.732	0.735	1.513	1.577	1.660	
E		1.113					1.800	1.016	1.061	0.737	1.651	1.609	
F		0.816					1.831	0.893	0.902	0.795	0.684	1.733	
G		0.711					1.716	1.477	0.985	1.097	0.810	1.720	
H							0.968	0.945	0.959	0.935	0.775	0.964	
												colorimetric background	
								1.010	0.661	0.494	0.450	0.419	0.448

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.390	DRUG 1918	25%	50%
VIRUS CONTROL	0.428	IC (uG/mL)	85.40	124.00
CELL CONTROL	1.179	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.751	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1918		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	.177	0%	1.211	100%	0.058
C	2	0.146	19%	1.164	99%	0.029
D	6.2	0.060	8%	1.254	100%	0.060
E	20	-.059	0%	1.288	100%	0.104
F	62.5	0.097	13%	1.057	90%	0.271
high G	200	-.492	0%	-.044	0%	0.620

SUMMARY GRAPH

--- 1918 vs. HIV1 (08/01/00)

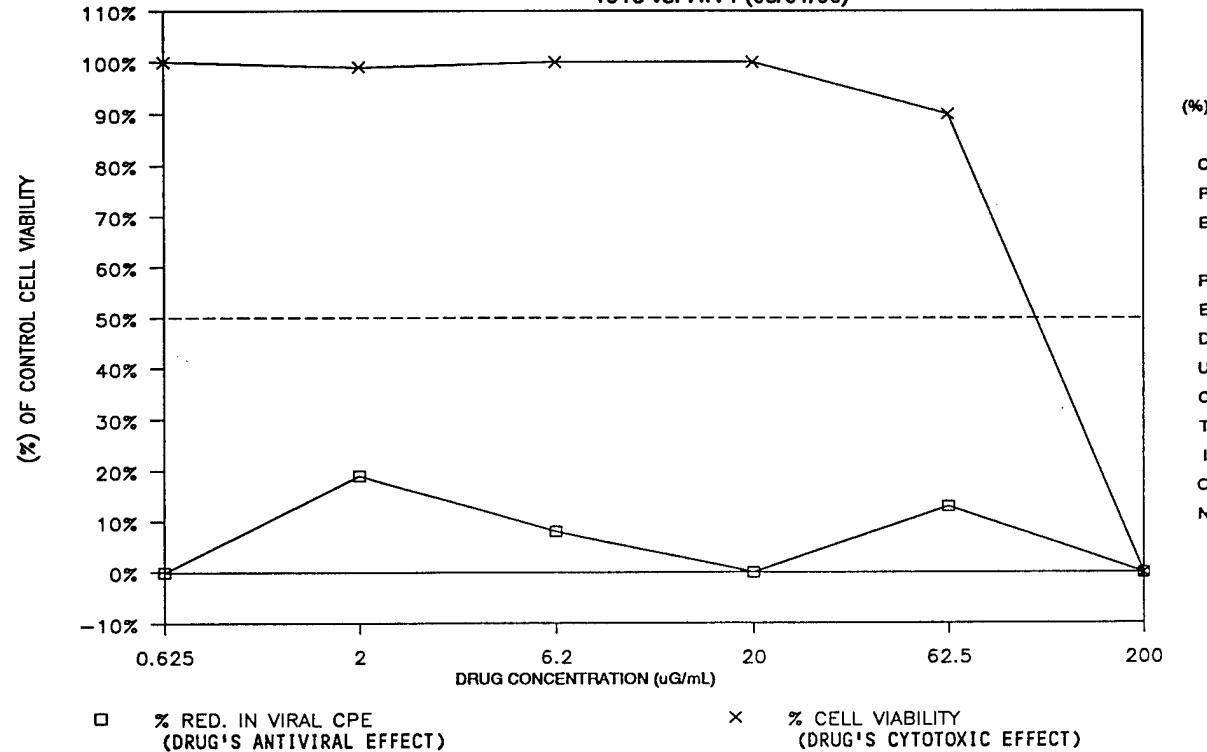


PLATE RFV
DRUG 1919IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1919
TAI: >0.10 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
A	0.405	0.361	0.378	0.373	0.379	0.373	0.045	0.050	0.049	0.055	0.055	0.061
	tox	cc/vc	reagent background drug 1919 experimental			tox				cc/vc		
B	1.556	1.524	0.791	1.035	0.770	1.645				1.661		
C	1.870	1.625	1.004	0.725	0.630	1.855				1.593		
D	1.608	1.604	0.692	0.656	0.724	1.836				1.631		
E	1.419	1.132	0.629	0.652	0.591	1.690				0.650		
F	0.449	0.714	0.424	0.433	0.428	0.408				0.700		
G	0.458	0.710	0.448	0.464	0.472	0.466				0.655		
H	0.477	0.428	0.423	0.416	0.434	0.429						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.378	DRUG 1919	25%	50%
VIRUS CONTROL	0.382	TC (uG/mL)	27.90	39.40
CELL CONTROL	1.228	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.846	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1919		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	0.054	6%	1.171	95%	0.051
C	2	-.030	0%	1.428	100%	0.056
D	6.25	-.107	0%	1.306	100%	0.038
E	20	-.181	0%	1.131	92%	0.045
F	62.5	-.382	0%	0.000	0%	0.050
high G	200	-.398	0%	-.015	0%	0.099

SUMMARY GRAPH

--- 1919 vs. HIV1 (08/01/00)

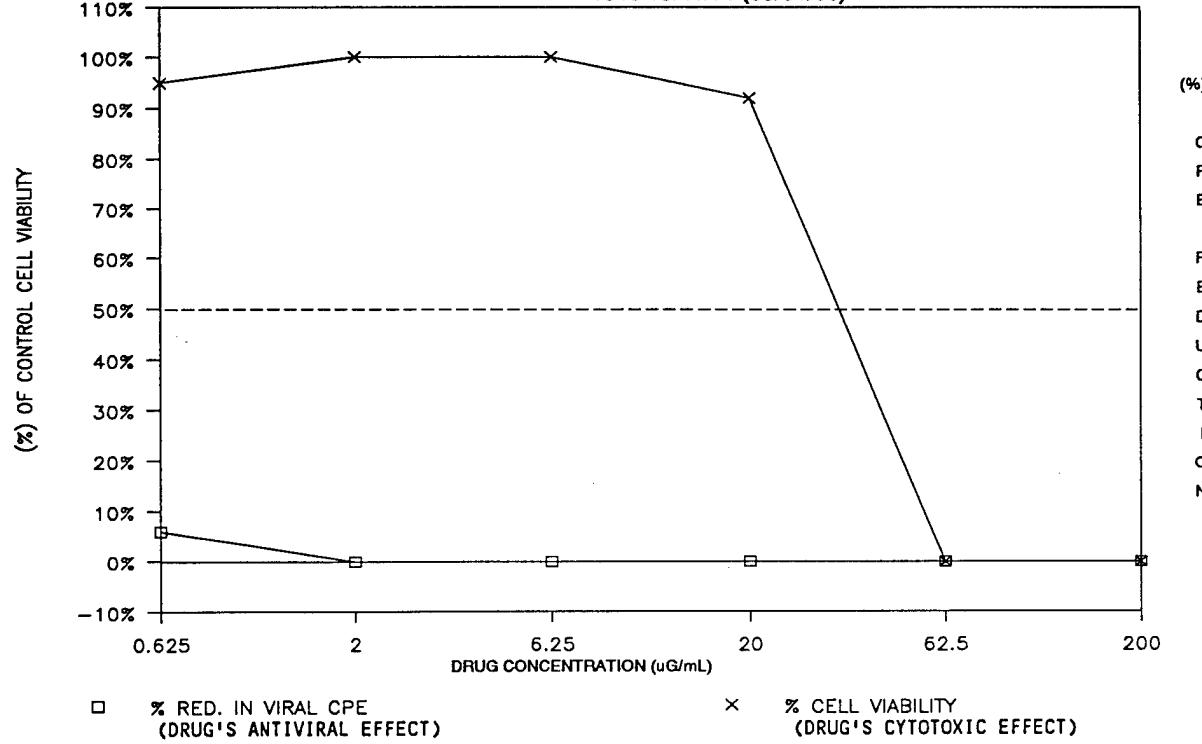


PLATE RFV
DRUG 1920IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1920
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12	
	reagent background						plastic background						
A	0.405	0.361	0.378	0.373	0.379	0.373	0.045	0.050	0.049	0.055	0.055	0.061	
B		cc/vc					tox	drug 1920 experimental			cc/vc	tox	
C		1.524					1.544	0.793	0.762	0.840	1.661	1.597	
D		1.625					1.746	0.615	0.685	0.747	1.593	1.539	
E		1.604					1.544	0.770	0.629	1.334	1.631	1.474	
F		1.132					1.158	0.625	0.621	1.375	0.650	1.148	
G		0.714					0.506	0.563	0.620	0.570	0.700	0.521	
H		0.710					0.670	0.668	0.618	0.647	0.655	0.661	
							colorimetric background						
								0.696	0.516	0.457	0.430	0.418	0.425

tox=cell toxicity

cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.378	DRUG 1920	25%	50%
VIRUS CONTROL	0.382	TC (uG/mL)	12.00	25.20
CELL CONTROL	1.228	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.846	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1920		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	.009	0%	1.145	93%	0.047	
C	2	.118	0%	1.224	100%	0.040	
D	6.2	0.099	12%	1.079	88%	0.052	
E	20	0.034	4%	0.696	57%	0.079	
F	62.5	.314	0%	.003	0%	0.138	
high G	200	.434	0%	-.031	0%	0.318	

SUMMARY GRAPH

--- 1920 vs. HIV1 (08/01/00)

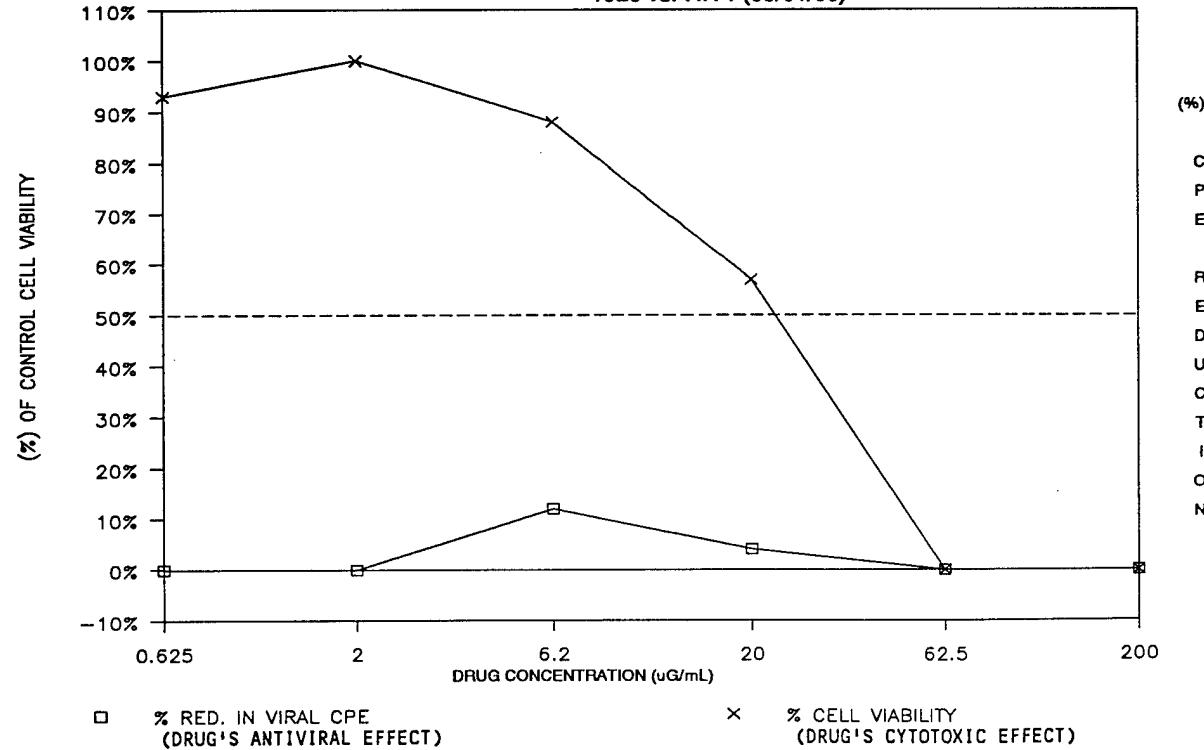


PLATE RFW
DRUG 1921IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1921
TAI: 0.79 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.381	0.366	0.370	0.361	0.369	0.363	0.046	0.044	0.044	0.053	0.055	0.053
tox	cc/vc	drug 1921 experimental			tox						cc/vc	
B	1.436	1.574	0.627	0.647	0.613	1.572					1.489	
C	1.453	1.633	0.659	0.637	0.623	1.577					1.662	
D	1.379	1.486	0.589	0.656	0.601	1.463					1.606	
E	1.457	0.681	0.704	1.229	1.061	1.460					0.664	
F	0.508	0.675	0.534	0.867	0.933	0.865					0.626	
G	0.469	0.687	0.487	0.470	0.492	0.481					0.645	
colorimetric background												
H	0.500	0.451	0.448	0.352	0.327	0.357						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.368	DRUG 1921	25%	50%
VIRUS CONTROL	0.295	TC (μ G/mL)	25.90	42.20
CELL CONTROL	1.207	IC (μ G/mL)	17.70	-----
DIFFERENTIAL	0.912	ANTIVIRAL INDEX (AI)	1.47	-----

DRUG 1921		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (μ G/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	- .023	0%	1.147	95%	- .011	
C	2	0.018	2%	1.188	98%	- .041	
D	6.25	- .032	0%	1.069	89%	- .016	
E	20	0.255	28%	1.010	84%	0.080	
F	62.5	0.032	4%	0.235	19%	0.083	
high G	200	- .312	0%	~ .025	0%	0.132	

SUMMARY GRAPH

--- 1921 vs. HIV1 (08/01/00)

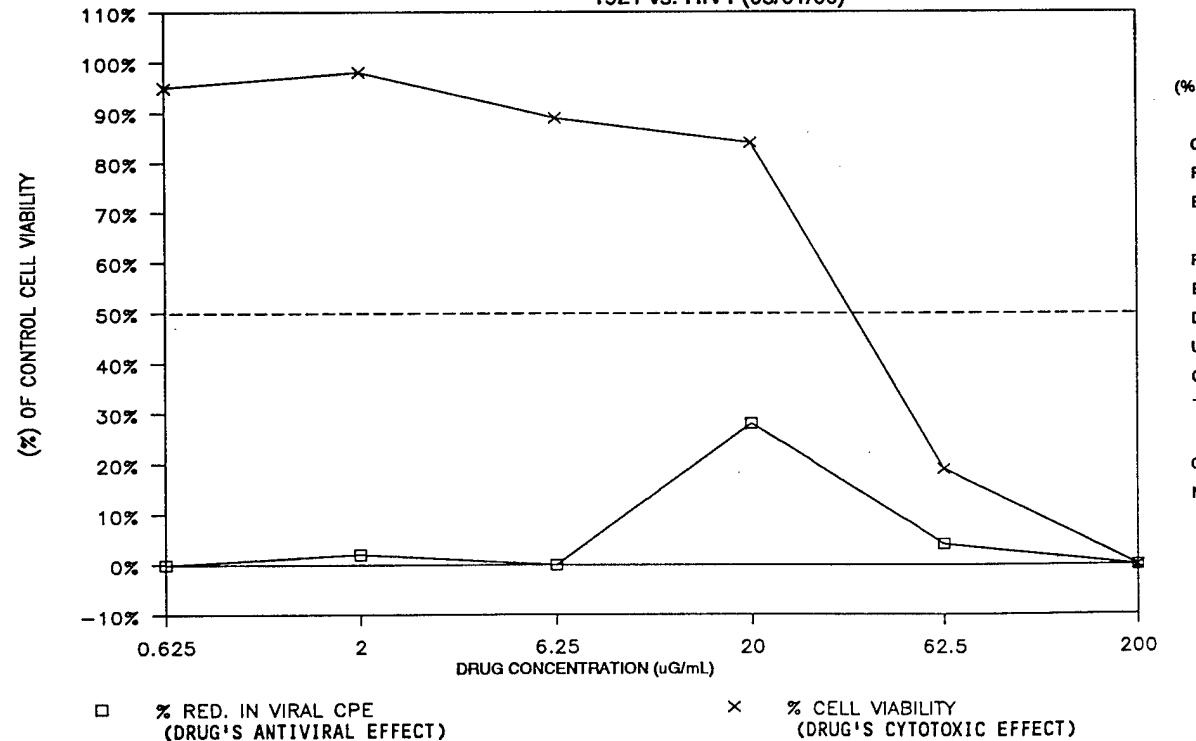


PLATE RFX
DRUG 1924IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1924
TAI: >3.43 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.393	0.396	0.391	0.393	0.390	0.397	0.043	0.049	0.049	0.049	0.052	0.056
tox	cc/vc			drug 1924 experimental		tox					cc/vc	
B	1.385	1.360	1.282	0.625	0.614	1.627					1.452	
C	1.407	1.411	0.629	0.606	0.578	1.417					1.440	
D	1.462	1.566	0.634	0.582	0.690	1.652					1.639	
E	1.534	0.664	0.575	0.701	0.604	1.727					0.613	
F	1.579	0.668	1.125	0.594	0.669	1.697					0.744	
G	1.519	0.665	0.578	0.754	1.074	1.694					0.594	
colorimetric background												
H	0.559	0.424	0.472	0.465	0.438	0.431						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.393	DRUG 1924	25%	50%
VIRUS CONTROL	0.265	TC (uG/mL)	> 200.00	> 200.00
CELL CONTROL	1.085	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.820	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1924		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	0.144	18%	1.075	99%	0.038	
C	2	-.099	0%	0.974	90%	0.045	
D	6.25	-.095	0%	1.092	100%	0.072	
E	20	-.110	0%	1.158	100%	0.079	
F	62.5	0.107	13%	1.214	100%	0.031	
high G	200	-.022	0%	1.047	97%	0.166	

SUMMARY GRAPH

--- 1924 vs. HIV1 (08/01/00)

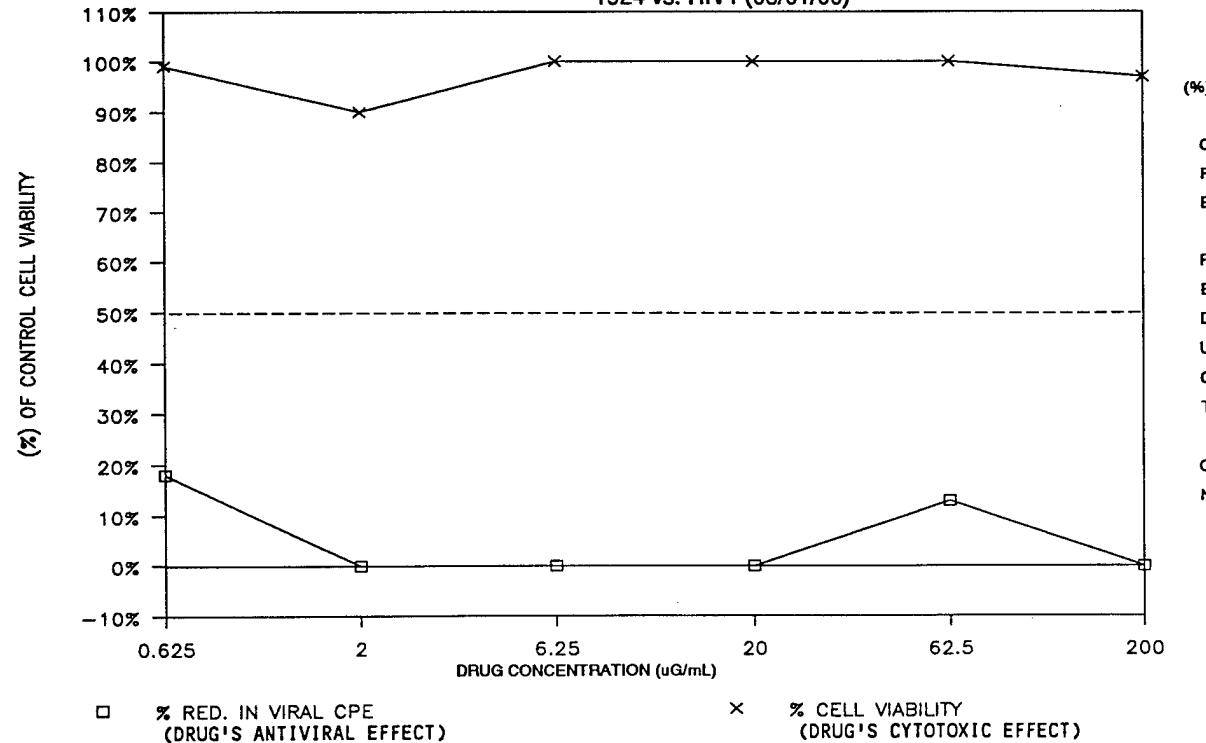


PLATE RFX
DRUG 1925IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1925
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.393	0.396	0.391	0.393	0.390	0.397	0.043	0.049	0.049	0.049	0.052	0.056
B	cc/vc 1.360						1.532	0.625	0.620	0.742	1.452	1.450
C	1.411						1.503	0.563	0.554	0.488	1.440	1.362
D	1.566						1.586	0.704	0.563	0.601	1.639	1.513
E	0.664						1.538	0.508	0.525	0.565	0.613	1.427
F	0.668						0.503	0.484	0.421	0.516	0.744	0.524
G	0.665						0.436	0.432	0.423	0.464	0.594	0.489
H												
colorimetric background												
							0.493	0.423	0.427	0.430	0.407	0.435

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS HIV1 PASSAGE -- PROJECT # --
CELLS CEMSS PASSAGE -- SPONSOR WALTERREEDSHIPMENT NUMBER -- OPERATOR KMW TEST DATE 08/01/00
STRN RF DATE READ 08/01/00

REAGENT	0.393	DRUG 1925	25%	50%	95%
VIRUS CONTROL	0.265	TC (uG/mL)	30.50	42.40	114.00
CELL CONTROL	1.085	IC (uG/mL)	-----	-----	-----
DIFFERENTIAL	0.820	ANTIVIRAL INDEX (AI)	-----	-----	-----

DRUG 1925		ANTIVIRAL TEST VALUES			CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE		MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	- .038	0%		1.056	97%	0.042	
C	2	- .137	0%		1.025	94%	0.014	
D	6.2	- .072	0%		1.119	100%	0.037	
E	20	- .159	0%		1.055	97%	0.034	
F	62.5	- .214	0%		0.090	8%	0.030	
high G	200	- .318	0%		- .031	0%	0.100	

SUMMARY GRAPH

--- 1925 vs. HIV1 (08/01/00)

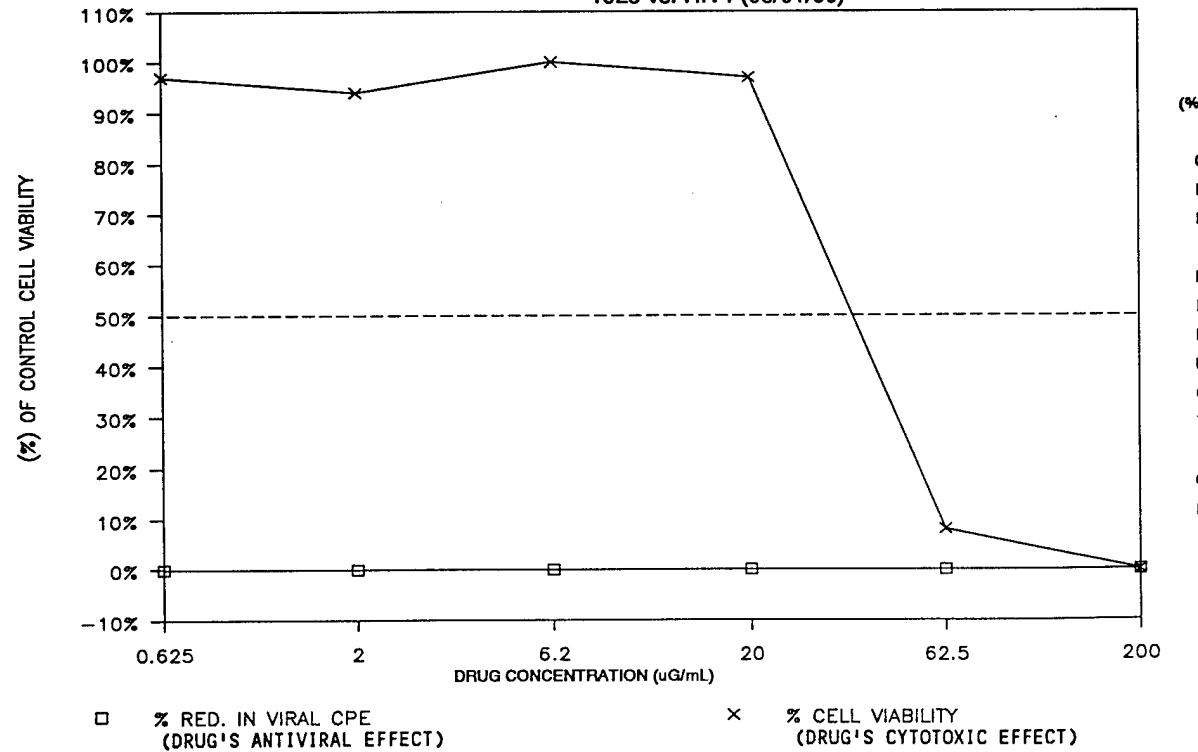


PLATE RFY
DRUG 1927IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1927
TAI: 0.80 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.436	0.390	0.425	0.417	0.408	0.421	0.054	0.055	0.054	0.056	0.057	0.060
tox	cc/vc	drug 1927 experimental			tox						cc/vc	
B	1.559	1.573	0.715	0.697	0.695	1.649					1.549	
C	1.543	1.603	0.682	0.696	0.819	1.655					1.612	
D	1.611	1.660	0.608	0.712	0.746	1.844					1.516	
E	1.580	0.705	0.565	0.625	0.555	1.549					0.659	
F	0.828	0.731	0.818	0.792	0.823	0.907					0.741	
G	0.464	0.602	0.455	0.450	0.445	0.448					0.766	
colorimetric background												
H	0.507	0.443	0.430	0.428	0.417	0.432						

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.416	DRUG 1927	25%	50%
VIRUS CONTROL	0.285	TC (μ G/mL)	35.30	52.70
CELL CONTROL	1.169	IC (μ G/mL)	-----	-----
DIFFERENTIAL	0.885	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1927		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (μ G/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	-.014	0%	1.172	100%	0.016
C	2	0.031	4%	1.182	100%	0.001
D	6.25	-.024	0%	1.299	100%	0.012
E	20	-.133	0%	1.134	97%	0.014
F	62.5	0.083	9%	0.424	36%	0.027
high G	200	-.342	0%	-.051	0%	0.091

SUMMARY GRAPH

--- 1927 vs. HIV1 (08/01/00)

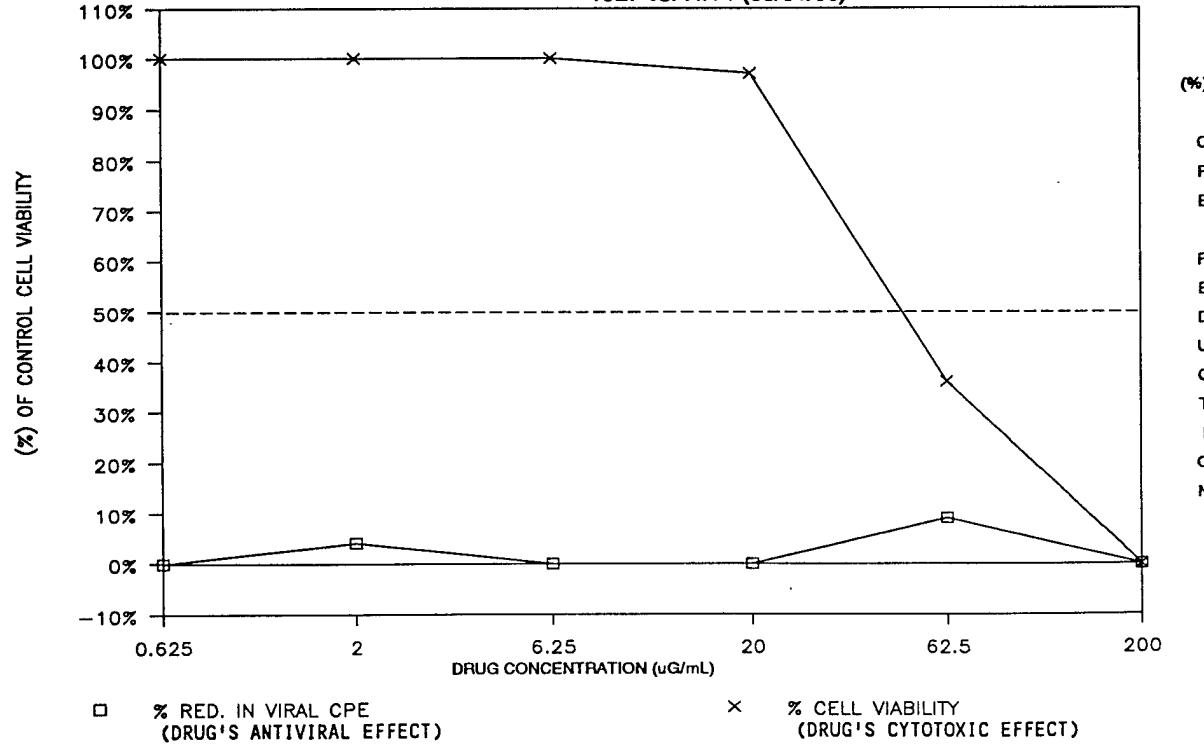


PLATE RFY
DRUG 1929IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1929
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.436	0.390	0.425	0.417	0.408	0.421	0.054	0.055	0.054	0.056	0.057	0.060
B	cc/vc						tox		drug 1929 experimental	cc/vc	tox	
C	1.573						0.775	0.900	0.772	1.107	1.549	0.761
D	1.603						0.747	0.984	0.985	0.835	1.612	0.777
E	1.660						0.707	0.651	0.960	0.710	1.516	0.531
F	0.705						0.439	0.464	0.482	0.507	0.659	0.471
G	0.731						0.403	0.398	0.379	0.412	0.741	0.421
H	0.602						0.468	0.467	0.483	0.487	0.766	0.495
colorimetric background												
							0.481	0.423	0.421	0.431	0.441	0.454

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.416	DRUG 1929	25%	50%
VIRUS CONTROL	0.285	TC (uG/mL)	< 0.63	< 0.63
CELL CONTROL	1.169	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.885	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1929		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	0.188	21%	0.314	27%	0.038	
C	2	0.209	24%	0.321	27%	0.025	
D	6.2	0.058	7%	0.188	16%	0.015	
E	20	- .221	0%	0.034	3%	0.005	
F	62.5	- .311	0%	-.011	0%	0.007	
high G	200	- .287	0%	0.000	0%	0.065	

SUMMARY GRAPH

--- 1929 vs. HIV1 (08/01/00)

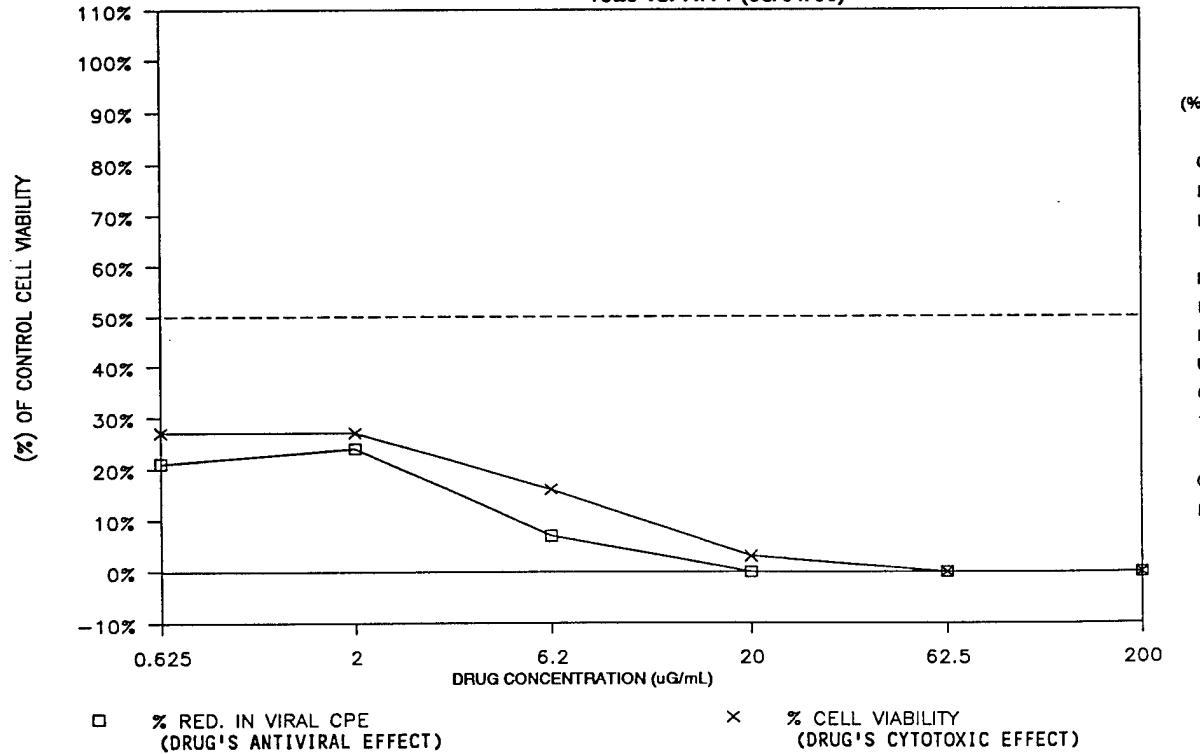


PLATE RFZ
DRUG 1930IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1930
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.425	0.421	0.433	0.451	0.437	0.457	0.067	0.070	0.067	0.070	0.073	0.075
tox	cc/vc	cc/vc	drug 1930 experimental		tox						cc/vc	
B	1.024	1.436	0.596	0.639	0.814	1.017					1.627	
C	0.875	1.495	0.894	0.879	0.784	0.975					1.697	
D	0.793	1.643	1.016	0.970	1.085	0.863					1.728	
E	0.721	0.940	0.830	0.950	0.706	0.691					0.727	
F	0.695	0.581	0.820	0.928	0.883	0.733					0.671	
G	1.007	0.956	0.991	1.047	1.003	1.020					0.746	
colorimetric background												
H	1.005	0.591	0.455	0.422	0.364	0.383						

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.437	DRUG 1930	25%	50%
VIRUS CONTROL	0.333	TC (uG/mL)	< 0.63	1.61
CELL CONTROL	1.167	IC (uG/mL)	3.38	-----
DIFFERENTIAL	0.834	ANTIVIRAL INDEX (AI)	< 0.18	-----

DRUG 1930		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	- .033	0%	0.637	55%	-.054	
C	2	0.155	19%	0.561	48%	-.073	
D	6.25	0.268	32%	0.406	35%	-.015	
E	20	0.040	5%	0.251	22%	0.018	
F	62.5	-.047	0%	0.123	11%	0.154	
high G	200	-.325	0%	0.008	1%	0.568	

SUMMARY GRAPH

--- 1930 vs. HIV1 (08/01/00)

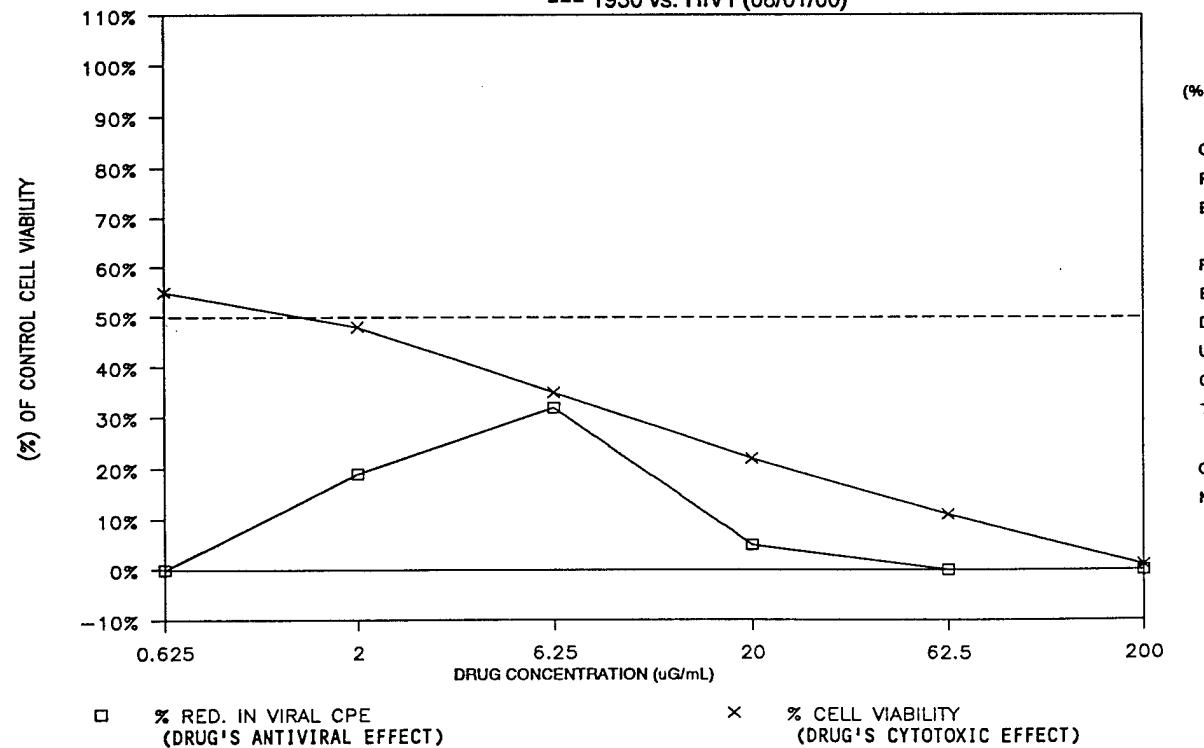


PLATE RFZ
DRUG 1932IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1932
TAI: 3.39 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.425	0.421	0.433	0.451	0.437	0.457	0.067	0.070	0.067	0.070	0.073	0.075
B		cc/vc 1.436					tox 1.588	drug 1932 experimental 0.669	0.668	0.661	1.627	1.642
C		1.495					1.713	0.713	0.652	1.265	1.697	1.712
D		1.643					1.728	0.709	0.772	0.646	1.728	1.625
E		0.940					1.555	0.669	0.617	0.609	0.727	1.522
F		0.581					1.016	0.858	1.025	1.189	0.671	1.473
G		0.956					0.683	0.668	0.688	0.654	0.746	0.663
H							plastic background					
							0.631	0.446	0.396	0.388	0.399	0.424

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.437	DRUG 1932	25%	50%
VIRUS CONTROL	0.333	TC (uG/mL)	52.60	101.00
CELL CONTROL	1.167	IC (uG/mL)	53.40	-----
DIFFERENTIAL	0.834	ANTIVIRAL INDEX (AI)	0.98	-----

DRUG 1932		ANTIVIRAL TEST VALUES			CYTOTOXICITY TEST VALUES				
ROW ON PLATE	CONC. (uG/ml)	MEAN O.D.	% RED. IN CPE		MEAN O.D.	% CELL VIABILITY		COLORIMETRIC CONTROL	
low B	0.625	-.091	0%		1.191	100%		-.013	
C	2	0.144	17%		1.313	100%		-.038	
D	6.2	-.012	0%		1.288	100%		-.049	
E	20	-.097	0%		1.142	98%		-.041	
F	62.5	0.245	29%		0.798	68%		0.009	
high G	200	-.294	0%		0.042	4%		0.194	

SUMMARY GRAPH

--- 1932 vs. HIV1 (08/01/00)

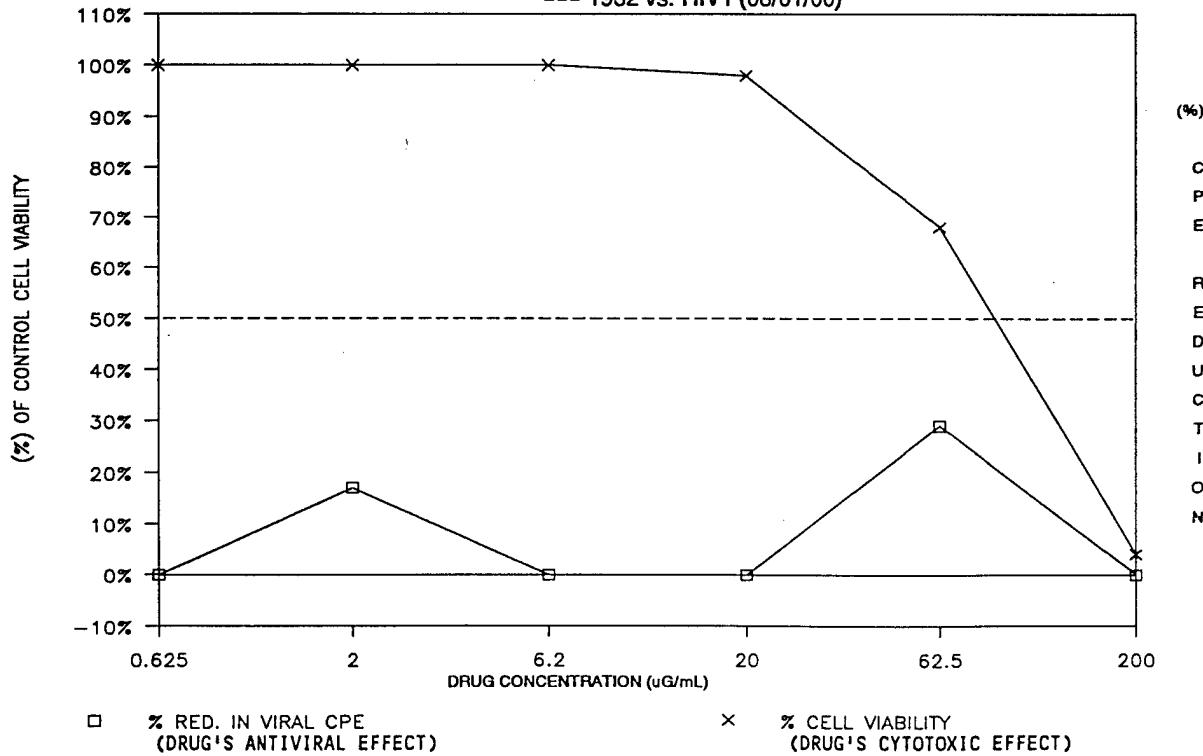


PLATE RG0
DRUG 1933IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1933
TAI: >3.79 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.405	0.358	0.394	0.400	0.390	0.432	0.042	0.047	0.046	0.046	0.052	0.061
tox	cc/vc			drug 1933 experimental		tox					cc/vc	
B	1.614	1.572	0.746	1.104	0.713	1.616					1.670	
C	1.590	1.554	0.633	0.708	0.653	1.788					1.744	
D	1.616	1.650	0.647	0.786	1.141	1.705					1.692	
E	1.626	0.820	0.650	1.237	0.656	1.700					0.771	
F	1.523	0.729	0.593	0.618	0.621	1.565					0.753	
G	0.757	0.641	0.949	1.054	0.658	1.303					0.677	
colorimetric background												
H	0.537	0.441	0.423	0.424	0.406	0.426						

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.397	DRUG 1933	25%	50%
VIRUS CONTROL	0.335	TC (μ G/mL)	99.00	169.00
CELL CONTROL	1.251	IC (μ G/mL)	-----	-----
DIFFERENTIAL	0.915	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1933		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (μ G/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	0.094	10%	1.190	95%	0.029	
C	2	- .077	0%	1.283	100%	0.010	
D	6.25	0.099	11%	1.237	99%	0.027	
E	20	0.090	10%	1.241	99%	0.026	
F	62.5	- .165	0%	1.104	88%	0.044	
high G	200	0.014	2%	0.492	39%	0.141	

SUMMARY GRAPH

--- 1933 vs. HIV1 (08/01/00)

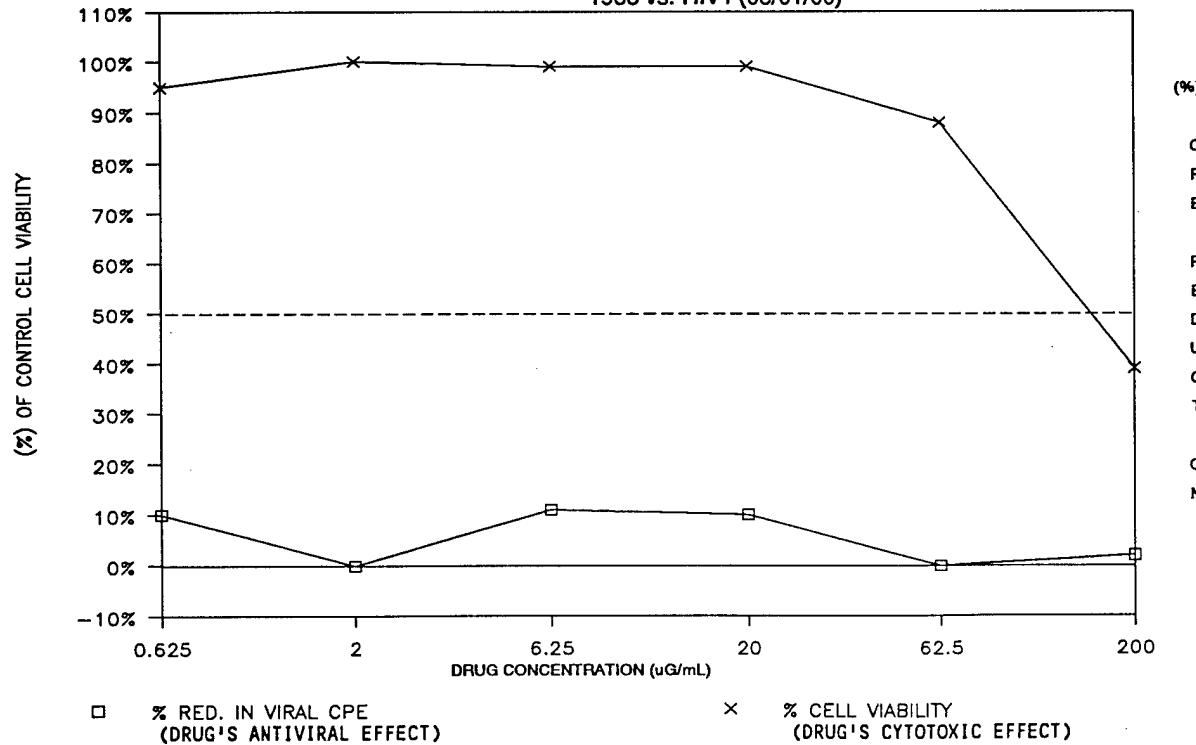


PLATE RG0
DRUG 1936IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1936
TAI: 1.38 Si: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.405	0.358	0.394	0.400	0.390	0.432	0.042	0.047	0.046	0.046	0.052	0.061
B	cc/vc	1.572					tox	0.751	0.777	0.902	1.670	1.702
C		1.554					1.774	0.782	0.748	0.960	1.744	1.731
D		1.650					1.722	0.723	0.710	0.707	1.692	1.673
E		0.820					1.728	0.615	0.661	0.706	0.771	1.793
F		0.729					0.963	0.550	0.631	0.552	0.753	1.154
G		0.641					0.533	0.505	0.528	0.508	0.677	0.549
H							colorimetric background					
							0.565	0.454	0.434	0.431	0.426	0.463

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.397	DRUG 1936	25%	50%
VIRUS CONTROL	0.335	TC (uG/mL)	40.40	60.90
CELL CONTROL	1.251	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.915	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1936		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	0.011	1%	1.199	96%	0.067
C	2	0.069	8%	1.327	100%	0.029
D	6.2	-.053	0%	1.267	100%	0.034
E	20	-.108	0%	1.327	100%	0.037
F	62.5	-.212	0%	0.604	48%	0.058
high G	200	-.386	0%	-.023	0%	0.168

SUMMARY GRAPH

--- 1936 vs. HIV1 (08/01/00)

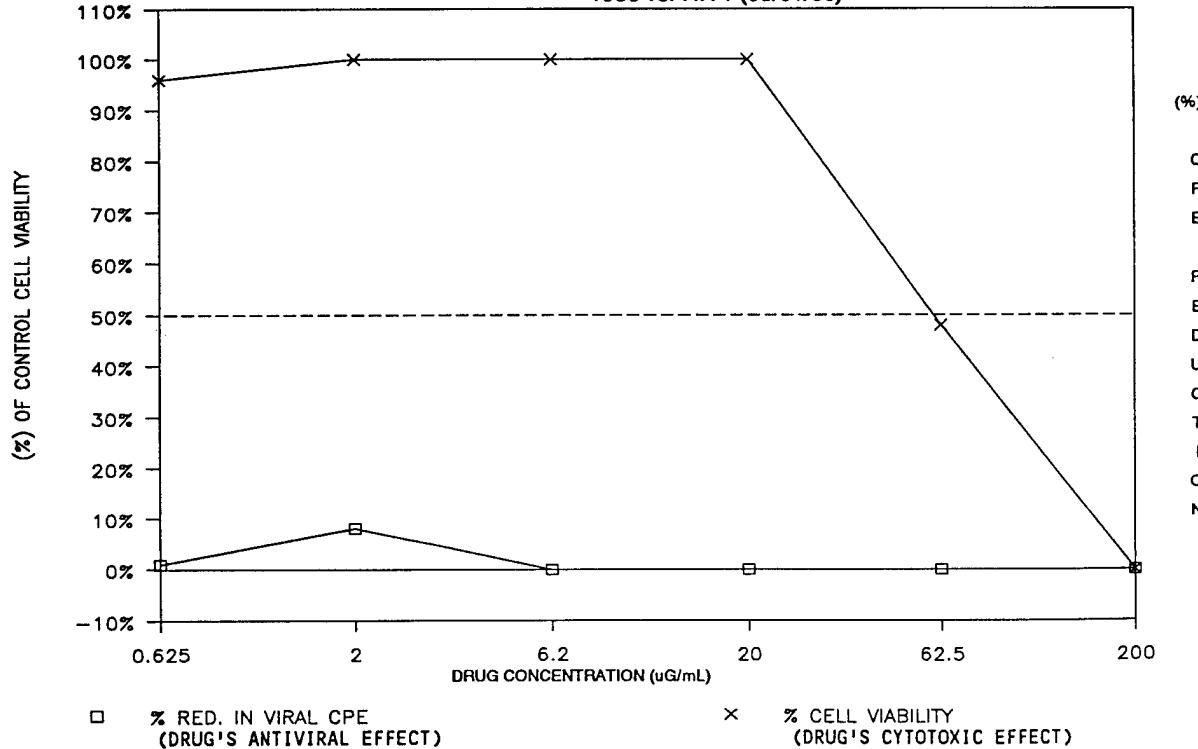


PLATE RG1
DRUG 1946IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1946
TAI: >14.67 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.419	0.387	0.416	0.403	0.394	0.414	0.043	0.048	0.043	0.051	0.051	0.059
tox	cc/vc			drug 1946 experimental		tox					cc/vc	
B	1.477	1.534	0.726	1.484	0.648	1.553					1.584	
C	1.596	1.614	0.717	0.876	0.676	1.594					1.632	
D	1.744	1.687	0.692	1.032	1.050	1.753					1.670	
E	1.707	0.715	1.215	0.684	0.708	1.707					0.687	
F	1.778	0.727	0.974	1.433	0.786	1.857					0.654	
G	0.458	0.664	0.449	0.457	0.432	0.428					0.709	
colorimetric background												
H	0.505	0.452	0.433	0.437	0.409	0.418						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.406	DRUG 1946	25%	50%
VIRUS CONTROL	0.287	TC (uG/mL)	96.90	131.00
CELL CONTROL	1.215	IC (uG/mL)	< 0.63	-----
DIFFERENTIAL	0.928	ANTIVIRAL INDEX (AI)	> 155.00	-----

DRUG 1946		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	0.248	27%	1.098	90%	0.012
C	2	0.061	7%	1.187	98%	0.003
D	6.25	0.200	22%	1.311	100%	0.032
E	20	0.149	16%	1.275	100%	0.027
F	62.5	0.325	35%	1.365	100%	0.047
high G	200	- .347	0%	- .063	0%	0.100

SUMMARY GRAPH

--- 1946 vs. HIV1 (08/01/00)

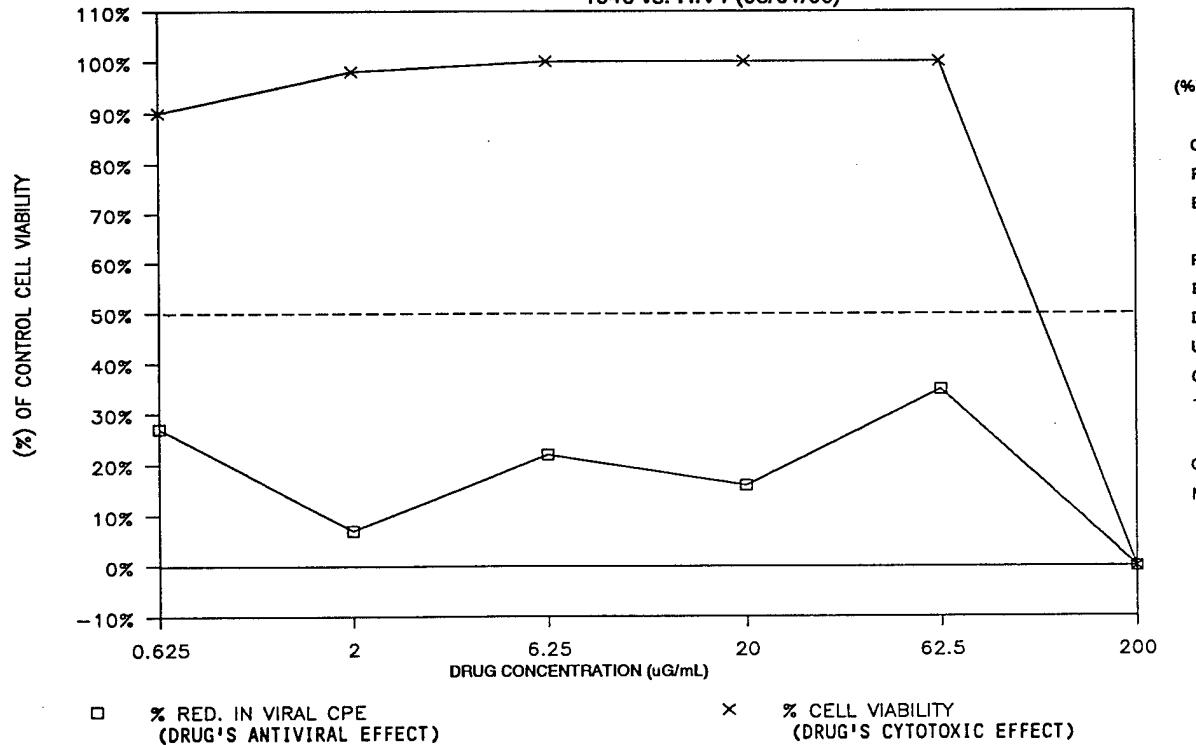


PLATE RG1
DRUG 1948IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1948
TAI: 8.65 SI: 1.88

	1	2	3	4	5	6	7	8	9	10	11	12
			reagent background						plastic background			
A	0.419	0.387	0.416	0.403	0.394	0.414	0.043	0.048	0.043	0.051	0.051	0.059
B		cc/vc					tox	drug 1948 experimental		cc/vc	tox	
B		1.534					1.536	0.710	0.690	0.705	1.584	1.613
C		1.614					1.649	0.787	0.687	0.752	1.632	1.638
D		1.687					1.788	0.722	0.743	0.625	1.670	1.671
E		0.715					1.334	1.553	1.682	0.986	0.687	1.744
F		0.727					0.453	0.451	0.464	0.433	0.654	0.490
G		0.664					0.608	0.563	0.601	0.573	0.709	0.613
H									colorimetric background			
									0.626	0.484	0.459	0.432
									0.431	0.454		

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.406	DRUG 1948	25%	50%
VIRUS CONTROL	0.287	TC (uG/mL)	26.70	38.60
CELL CONTROL	1.215	IC (uG/mL)	9.41	14.20
DIFFERENTIAL	0.928	ANTIVIRAL INDEX (AI)	2.83	2.72

DRUG 1948		ANTIVIRAL TEST VALUES			CYTOTOXICITY TEST VALUES					
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL				
low B	0.625	-.040	0%	1.120	92%	0.049				
C	2	0.024	3%	1.213	100%	0.025				
D	6.2	-.022	0%	1.298	100%	0.026				
E	20	0.660	71%	1.080	89%	0.054				
F	62.5	-.321	0%	-.012	0%	0.078				
high G	200	-.335	0%	-.016	0%	0.221				

SUMMARY GRAPH

--- 1948 vs. HIV1 (08/01/00)

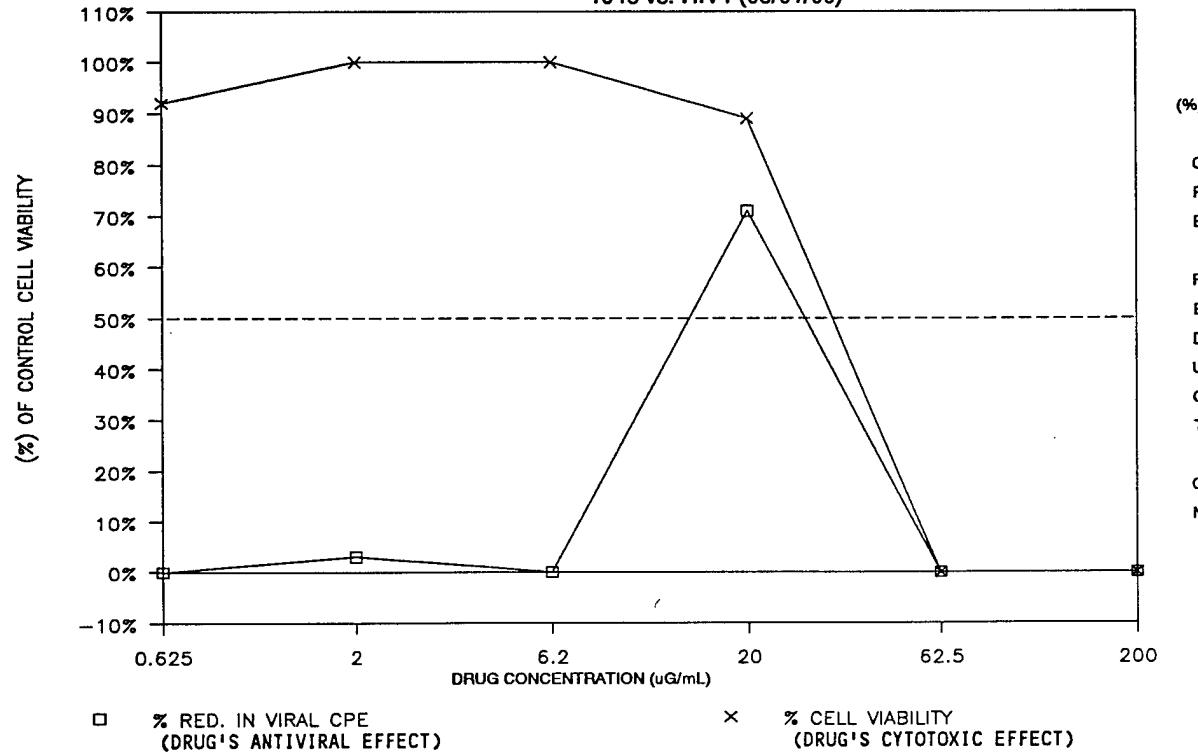


PLATE RG2
DRUG 1953IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1953
TAI: >1.62 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.420	0.409	0.390	0.410	0.415	0.418	0.047	0.051	0.051	0.051	0.054	0.060
tox	cc/vc			drug 1953 experimental		tox					cc/vc	
B	1.621	1.647	1.482	0.655	0.690	1.700					1.584	
C	1.671	1.705	0.710	0.702	0.656	1.764					1.718	
D	1.616	1.732	0.986	0.725	0.775	1.666					1.703	
E	1.702	0.705	0.931	0.803	0.732	1.793					0.745	
F	0.865	0.667	0.840	0.849	0.844	0.878					0.726	
G	0.976	0.759	0.959	0.977	0.984	0.962					0.711	
colorimetric background												
H	1.020	0.903	0.624	0.506	0.459	0.436						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.410	DRUG 1953	25%	50%
VIRUS CONTROL	0.309	TC (uG/mL)	26.30	38.40
CELL CONTROL	1.271	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.963	ANTIVIRAL INDEX (AI)	-----	-----

ROW ON PLATE	CONC. (uG/mL)	ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
		MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	0.198	21%	1.224	96%	0.026
C	2	-.079	0%	1.258	99%	0.049
D	6.25	0.014	1%	1.135	89%	0.096
E	20	-.111	0%	1.123	88%	0.214
F	62.5	-.368	0%	-.032	0%	0.493
high G	200	-.356	0%	-.051	0%	0.610

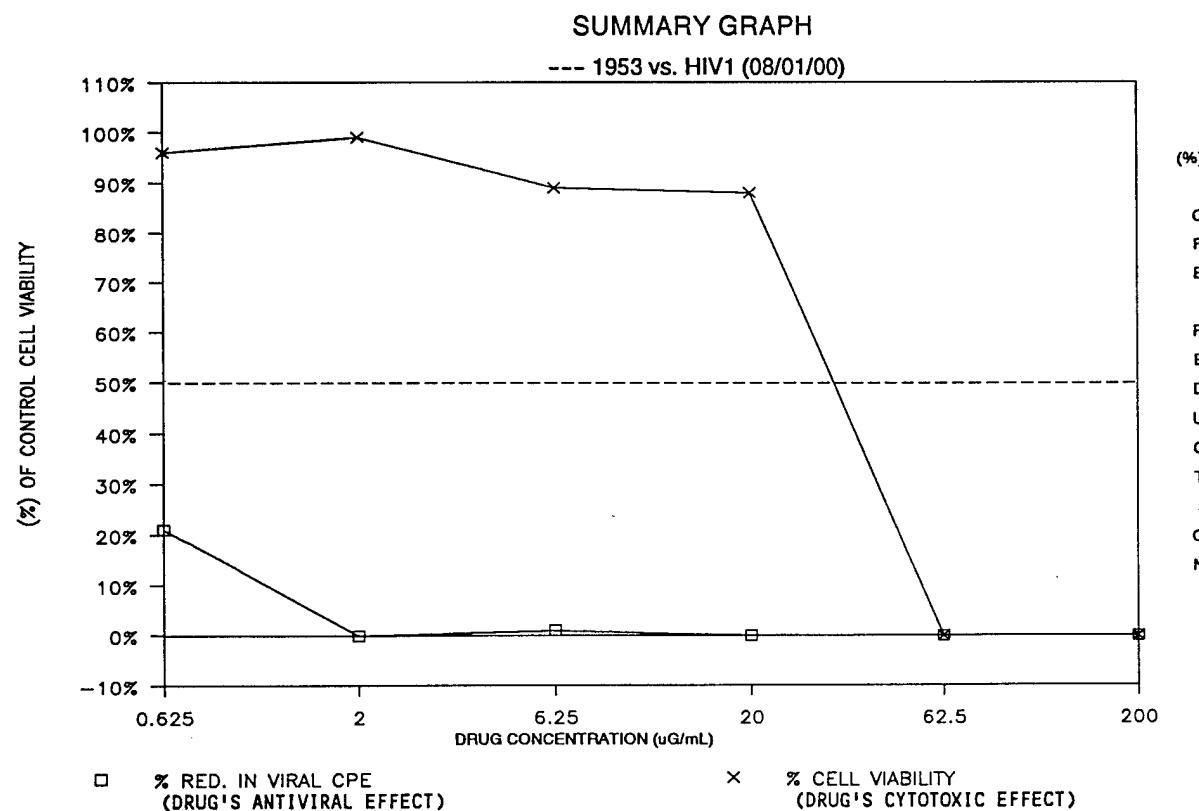


PLATE RG2
DRUG 1956IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1956
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12	
A	reagent background						plastic background						
	0.420	0.409	0.390	0.410	0.415	0.418	0.047	0.051	0.051	0.051	0.054	0.060	
B		cc/vc					tox	drug 1956 experimental	cc/vc	tox			
B	1.647						1.677	0.879	0.706	0.796	1.584	1.563	
C	1.705						1.642	0.695	0.650	0.668	1.718	1.690	
D	1.732						1.681	0.708	0.655	0.621	1.703	1.575	
E	0.705						1.697	0.635	0.681	0.754	0.745	1.634	
F	0.667						1.479	0.599	0.578	0.600	0.726	1.432	
G	0.759						0.655	0.642	0.637	0.713	0.711	0.842	
H								colorimetric background					
								0.571	0.469	0.433	0.425	0.420	0.452

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.410	DRUG 1956	25%	50%
VIRUS CONTROL	0.309	TC (uG/mL)	68.90	123.00
CELL CONTROL	1.271	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.963	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1956		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	0.033	3%	1.168	92%	0.042
C	2	-.058	0%	1.246	98%	0.010
D	6.2	-.072	0%	1.203	95%	0.015
E	20	-.052	0%	1.232	97%	0.023
F	62.5	-.186	0%	0.986	78%	0.059
high G	200	-.216	0%	0.177	14%	0.161

SUMMARY GRAPH

--- 1956 vs. HIV1 (08/01/00)

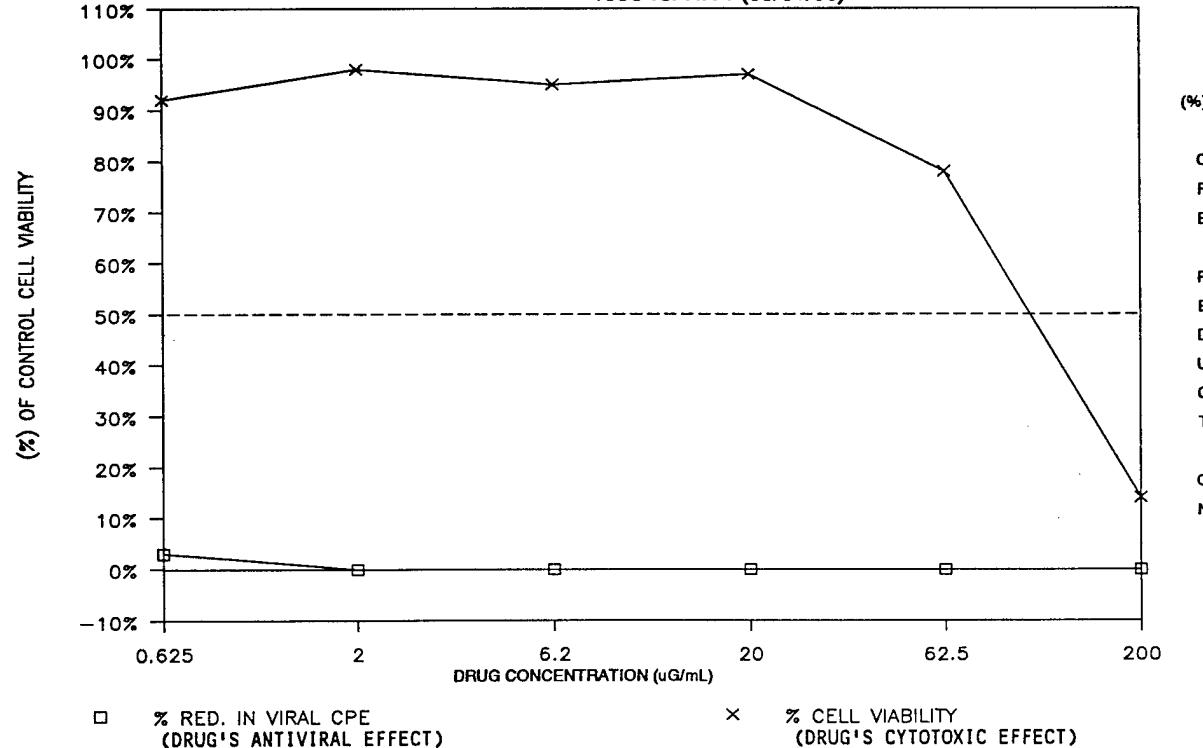


PLATE RG3
DRUG 1957

IN VITRO ANTIVIRAL RESULTS
XTT ASSAY

DRUG: --- 1957
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.434	0.422	0.407	0.415	0.430	0.447	0.056	0.059	0.056	0.059	0.064	0.065
B	1.489	1.656	0.573	0.560	0.611	1.539					cc/vc	1.634
C	1.238	1.612	0.692	0.633	0.573	1.260						1.646
D	0.452	1.647	0.380	0.400	0.404	0.451						1.670
E	0.405	0.693	0.346	0.367	0.371	0.394						0.695
F	0.456	0.729	0.409	0.424	0.416	0.427						0.828
G	0.507	0.687	0.464	0.526	0.463	0.488						0.745
colorimetric background												
H	0.543	0.464	0.426	0.431	0.407	0.445						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.426	DRUG 1957	25%	50%
VIRUS CONTROL	0.304	TC (uG/mL)	1.57	3.21
CELL CONTROL	1.218	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.915	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1957		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	- .167	0%	1.069	88%	0.019
C	2	- .078	0%	0.842	69%	- .019
D	6.25	- .340	0%	0.021	2%	0.005
E	20	- .368	0%	- .026	0%	0.000
F	62.5	- .351	0%	- .022	0%	0.038
high G	200	- .362	0%	- .045	0%	0.117

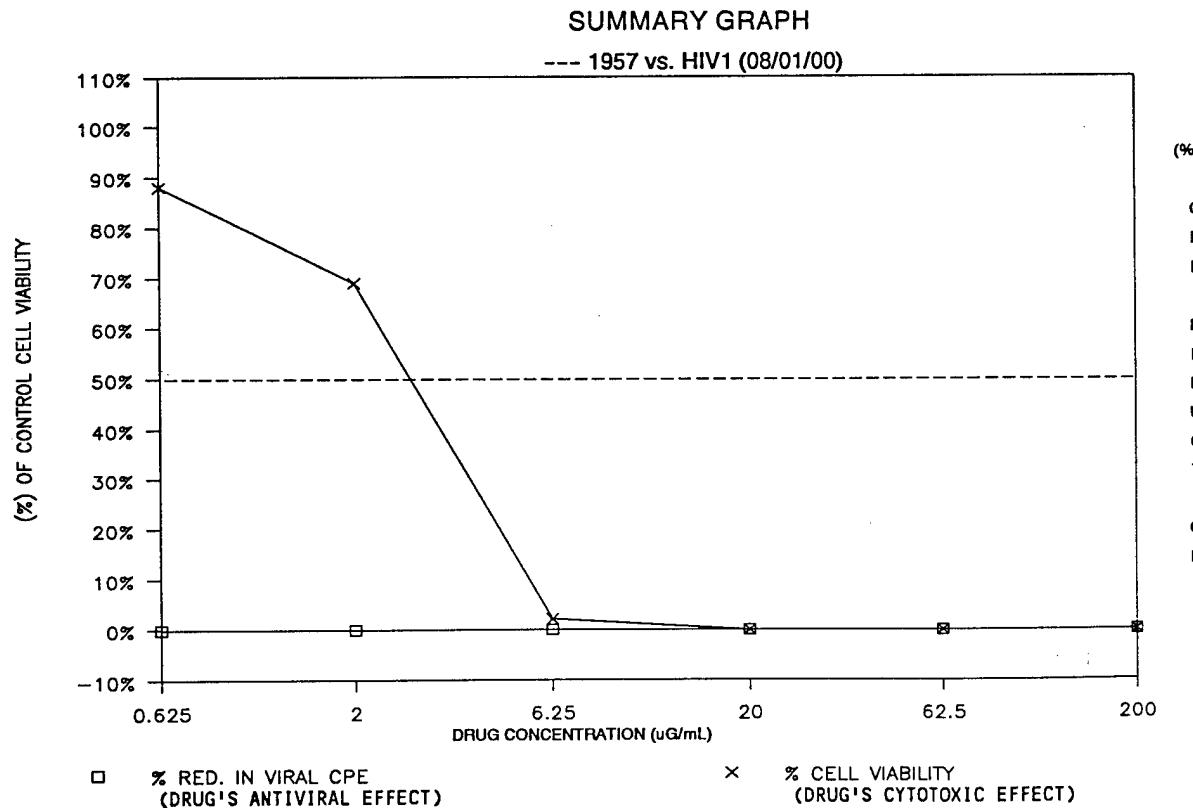


PLATE RG3
DRUG 1958IN VITRO ANTIVIRAL RESULTS
XTT ASSAYTAI: 0.14 SI: -----
DRUG: --- 1958

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.434	0.422	0.407	0.415	0.430	0.447	0.056	0.059	0.056	0.059	0.064	0.065
B		cc/vc					tox		drug 1958 experimental		cc/vc	tox
C		1.656					1.623	0.740	0.697	0.729	1.634	1.594
D		1.612					1.709	0.736	0.710	0.721	1.646	1.693
E		1.647					1.555	0.733	0.769	0.691	1.670	1.673
F		0.693					1.521	0.641	0.649	0.665	0.695	1.516
G		0.729					1.638	0.646	0.647	0.645	0.828	1.568
H		0.687					1.572	0.547	0.608	0.602	0.745	1.466
colorimetric background												
							0.430	0.425	0.429	0.431	0.399	0.452

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.426	DRUG 1958	25%	50%
VIRUS CONTROL	0.304	TC (uG/mL)	> 200.00	> 200.00
CELL CONTROL	1.218	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.915	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1958		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	-.034	0%	1.157	95%	0.026
C	2	0.020	2%	1.302	100%	-.027
D	6.2	-.004	0%	1.183	97%	0.005
E	20	-.081	0%	1.090	89%	0.003
F	62.5	-.082	0%	1.178	97%	-.001
high G	200	-.148	0%	1.089	89%	0.004

SUMMARY GRAPH

--- 1958 vs. HIV1 (08/01/00)

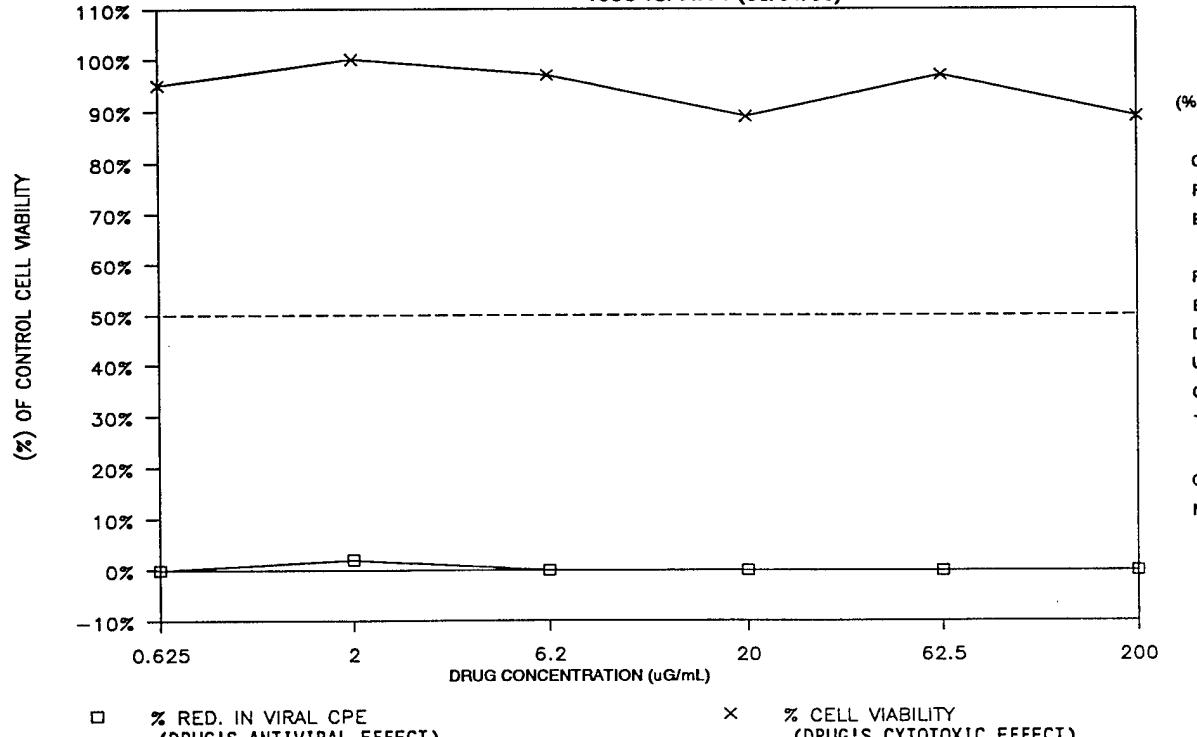


PLATE RG4
DRUG 1959IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1959
TAI: 6.20 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.467	0.448	0.465	0.457	0.443	0.451		0.062	0.067	0.066	0.070	0.071
	tox	cc/vc		drug 1959 experimental		tox					cc/vc	
B	1.462	1.626	0.757	0.688	0.808	1.639					1.712	
C	1.403	1.565	0.690	0.692	0.692	1.335					1.640	
D	1.618	1.788	1.400	0.930	0.922	1.485					1.784	
E	1.716	0.783	0.622	1.116	1.346	1.869					0.821	
F	0.556	0.786	0.538	0.558	0.583	0.608					0.734	
G	0.398	0.650	0.390	0.391	0.398	0.406					1.041	
colorimetric background												
H	0.417	0.422	0.431	0.466	0.455	0.456						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.455	DRUG 1959	25%	50%
VIRUS CONTROL	0.347	TC (uG/mL)	1.91	44.40
CELL CONTROL	1.231	IC (uG/mL)	5.01	-----
DIFFERENTIAL	0.883	ANTIVIRAL INDEX (AI)	0.38	-----

DRUG 1959		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	-.052	0%	1.094	89%	0.001	
C	2	-.111	0%	0.914	74%	0.000	
D	6.25	0.271	31%	1.085	88%	0.011	
E	20	0.250	28%	1.361	100%	-.024	
F	62.5	-.210	0%	0.160	13%	-.033	
high G	200	-.372	0%	-.015	0%	-.038	

SUMMARY GRAPH

--- 1959 vs. HIV1 (08/01/00)

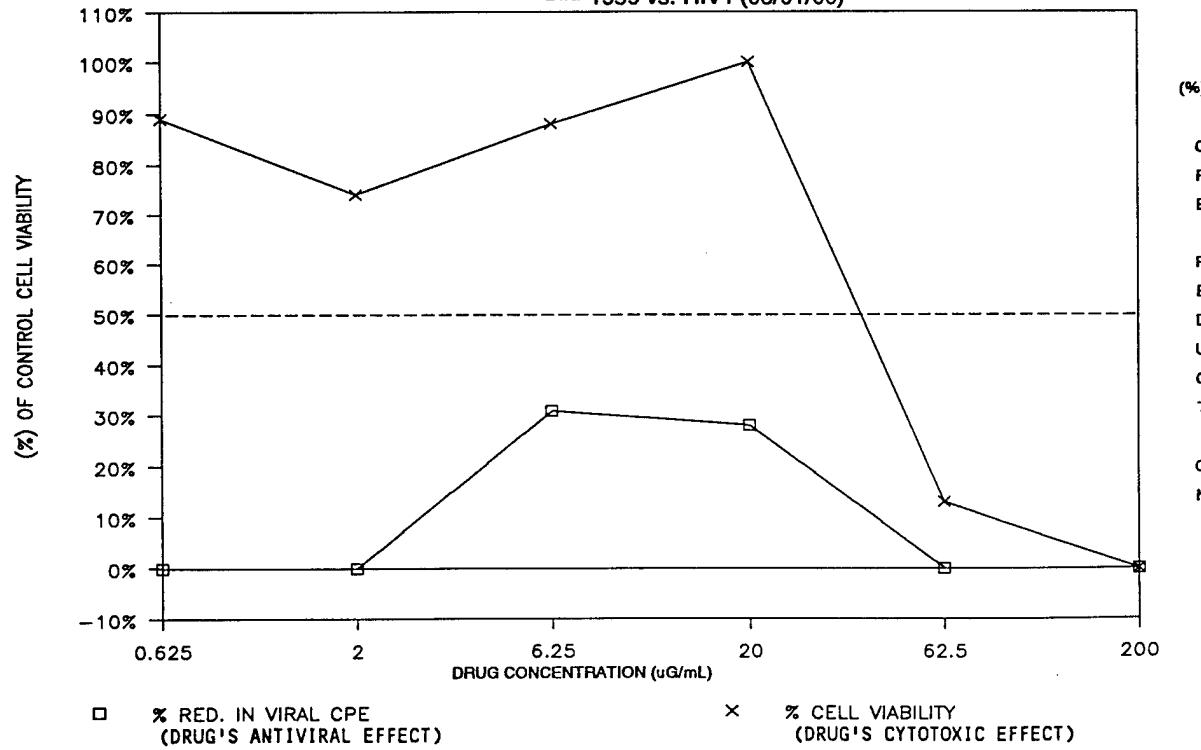


PLATE RG4
DRUG 1960IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1960
TAI: 12.87 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12	
A	0.467	0.448	0.465	0.457	0.443	0.451	0.062	0.067	0.066	0.070	0.071	0.075	
B		cc/vc 1.626					tox 1.767	0.707	0.840	0.774	1.712	1.648	
C		1.565					1.709	1.434	1.242	0.803	1.640	1.657	
D		1.788					1.829	1.403	0.723	0.712	1.784	1.748	
E		0.783					1.877	0.897	0.852	0.852	0.821	1.755	
F		0.786					1.740	0.612	0.743	0.783	0.734	1.661	
G		0.650					1.770	0.746	0.649	0.659	1.041	1.665	
H								0.455	0.455	0.449	0.456	0.450	0.494

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.455	DRUG 1960	25%	50%
VIRUS CONTROL	0.347	TC (μ G/mL)	> 200.00	> 200.00
CELL CONTROL	1.231	IC (μ G/mL)	1.27	-----
DIFFERENTIAL	0.883	ANTIVIRAL INDEX (AI)	> 157.45	-----

DRUG 1960		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (μ G/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	-.068	0%	1.213	99%	0.039
C	2	0.362	41%	1.233	100%	-.005
D	6.2	0.142	16%	1.332	100%	0.001
E	20	0.071	8%	1.367	100%	-.006
F	62.5	-.090	0%	1.245	100%	0.000
high G	200	-.118	0%	1.262	100%	0.000

SUMMARY GRAPH

--- 1960 vs. HIV1 (08/01/00)

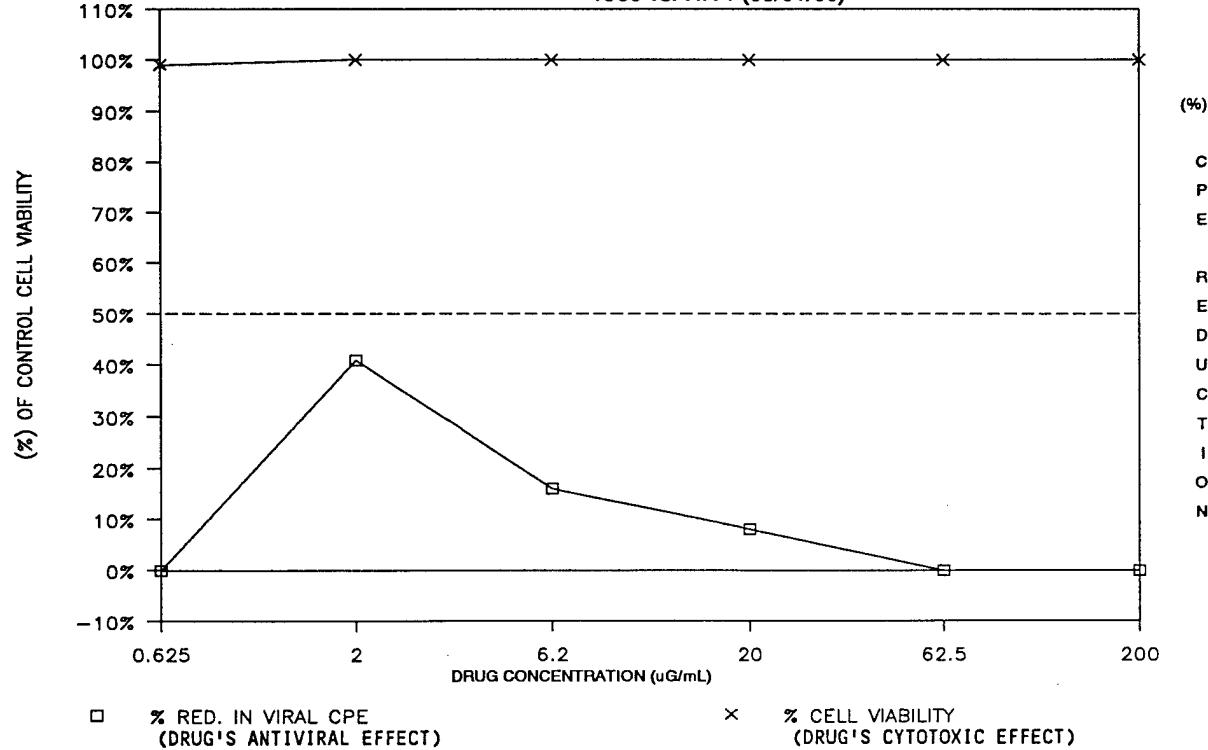


PLATE RG5
DRUG 1961IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: --- 1961
TAI: 7.01 SI: 1.86

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.434	0.421	0.427	0.440	0.413	0.445	0.059	0.060	0.059	0.055	0.058	0.061
tox	cc/vc	drug 1961 experimental	tox								cc/vc	
B	1.452	1.610	0.691	0.685	0.677	1.672					1.866	
C	1.458	1.669	0.735	0.672	1.474	1.588					1.815	
D	1.581	1.577	0.673	0.834	0.815	1.377					1.747	
E	1.817	0.731	1.732	1.041	1.158	1.689					0.659	
F	0.598	0.628	0.696	0.762	0.760	0.725					0.778	
G	0.551	0.814	0.536	0.515	0.516	0.523					0.859	
colorimetric background												
H	0.569	0.459	0.451	0.441	0.428	0.436						

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.430	DRUG 1961	25%	50%
VIRUS CONTROL	0.315	TC (uG/mL)	32.60	45.30
CELL CONTROL	1.284	IC (uG/mL)	10.30	17.60
DIFFERENTIAL	0.969	ANTIVIRAL INDEX (AI)	3.18	2.58

DRUG 1961		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	-.067	0%	1.126	88%	0.006	
C	2	0.217	22%	1.095	85%	-.002	
D	6.25	0.018	2%	1.038	81%	0.011	
E	20	0.544	56%	1.302	100%	0.021	
F	62.5	-.035	0%	0.202	16%	0.029	
high G	200	-.362	0%	-.032	0%	0.139	

SUMMARY GRAPH

--- 1961 vs. HIV1 (08/01/00)

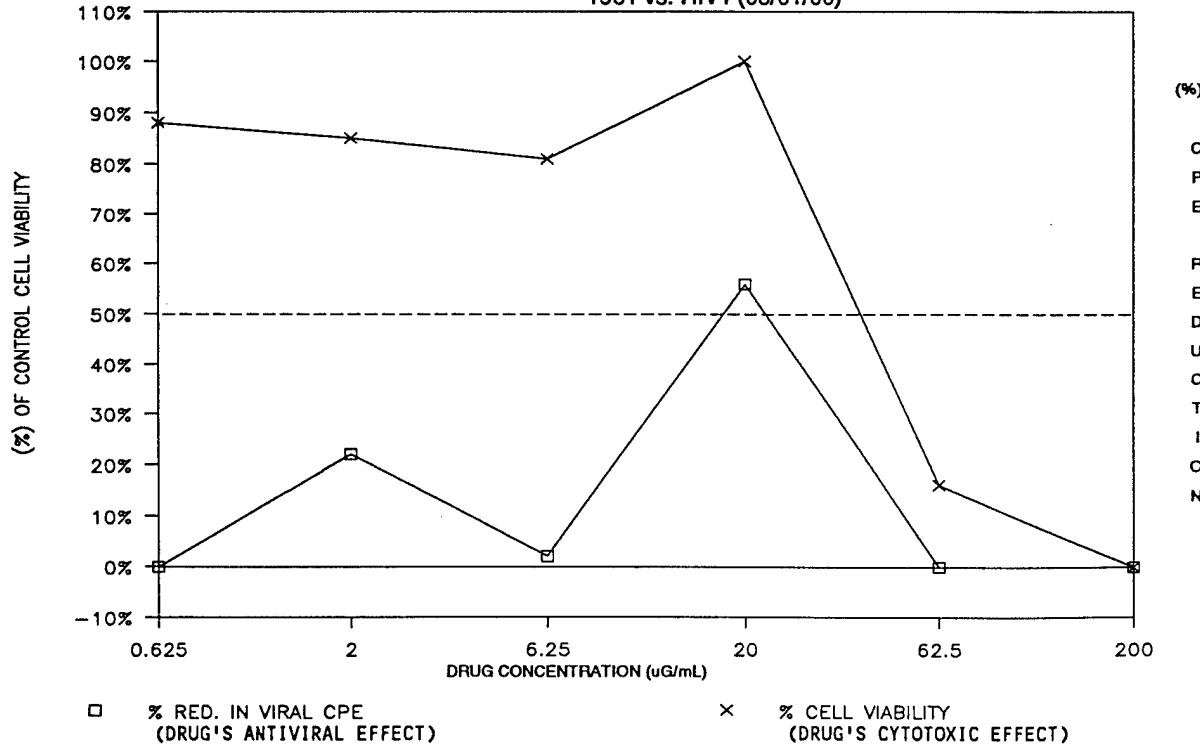


PLATE RG5
DRUG 1962IN VITRO ANTIVIRAL RESULTS
XTT ASSAYDRUG: ---- 1962
TAI: 0.26 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12	
			reagent background						plastic background				
A	0.434	0.421	0.427	0.440	0.413	0.445	0.059	0.060	0.059	0.055	0.058	0.061	
B		cc/vc					tox	drug 1962 experimental	cc/vc	tox			
B		1.610					1.755	1.006	0.754	0.656	1.866	1.672	
C		1.669					1.686	0.826	0.738	0.731	1.815	1.814	
D		1.577					1.843	0.879	0.697	0.679	1.747	1.746	
E		0.731					1.820	0.664	0.715	0.813	0.659	1.745	
F		0.628					0.438	0.486	0.460	0.509	0.778	0.526	
G		0.814					0.507	0.474	0.464	0.464	0.859	0.495	
H								0.491	0.473	0.457	0.457	0.430	0.490

tox=cell toxicity cc=cell control vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.430	DRUG 1962	25%	50%
VIRUS CONTROL	0.315	TC (uG/mL)	30.70	41.50
CELL CONTROL	1.284	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.969	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1962		ANTIVIRAL TEST VALUES			CYTOTOXICITY TEST VALUES					
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL				
low B	0.625	0.001	0%	1.224	95%	0.060				
C	2	0.020	2%	1.320	100%	0.000				
D	6.2	- .020	0%	1.338	100%	0.027				
E	20	- .041	0%	1.326	100%	0.027				
F	62.5	- .303	0%	0.009	1%	0.043				
high G	200	- .339	0%	0.010	1%	0.061				

SUMMARY GRAPH

--- 1962 vs. HIV1 (08/01/00)

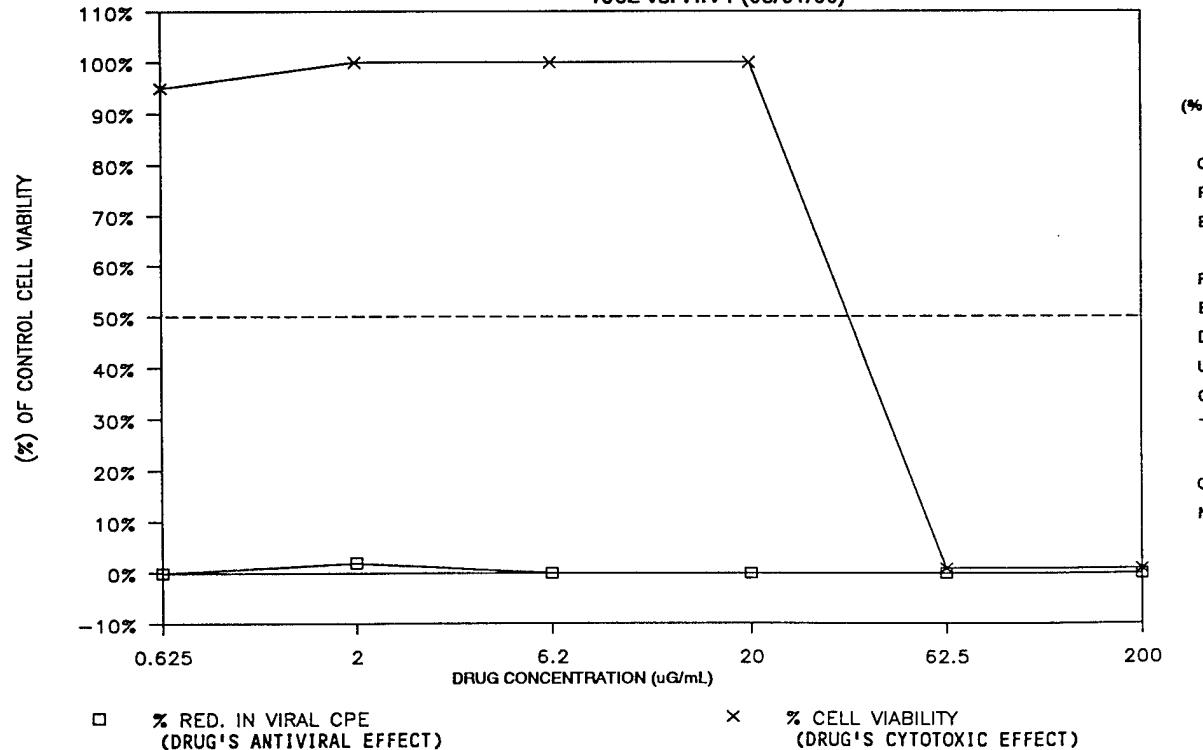


PLATE RG6

IN VITRO ANTIVIRAL RESULTS

DRUG 1963

XTT ASSAY

DRUG: --- 1963

TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.431	0.421	0.397	0.398	0.396	0.405	0.048	0.055	0.052	0.055	0.058	0.062
tox	cc/vc		drug 1963 experimental		tox						cc/vc	
B	1.578	1.637	0.625	0.664	0.945	1.704					1.462	
C	1.360	1.487	0.561	0.583	0.548	1.529					1.663	
D	1.233	1.589	0.914	1.025	0.669	1.321					1.681	
E	1.128	0.645	1.256	1.149	1.138	1.186					0.742	
F	0.995	0.942	1.036	1.089	1.103	1.031					0.879	
G	1.128	0.784	1.121	1.114	1.108	1.127					0.742	
colorimetric background												
H	1.151	0.783	0.555	0.453	0.428	0.435						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.408	DRUG 1963	25%	50%
VIRUS CONTROL	0.381	TC (uG/mL)	4.92	21.40
CELL CONTROL	1.179	IC (uG/mL)	15.40	-----
DIFFERENTIAL	0.798	ANTIVIRAL INDEX (AI)	0.32	-----

DRUG 1963		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	- .071	0%	1.206	100%	0.027
C	2	- .245	0%	1.017	86%	0.020
D	6.25	0.035	4%	0.824	70%	0.045
E	20	0.245	31%	0.602	51%	0.147
F	62.5	- .088	0%	0.230	20%	0.375
high G	200	- .418	0%	- .024	0%	0.743

SUMMARY GRAPH

--- 1963 vs. HIV1 (08/01/00)

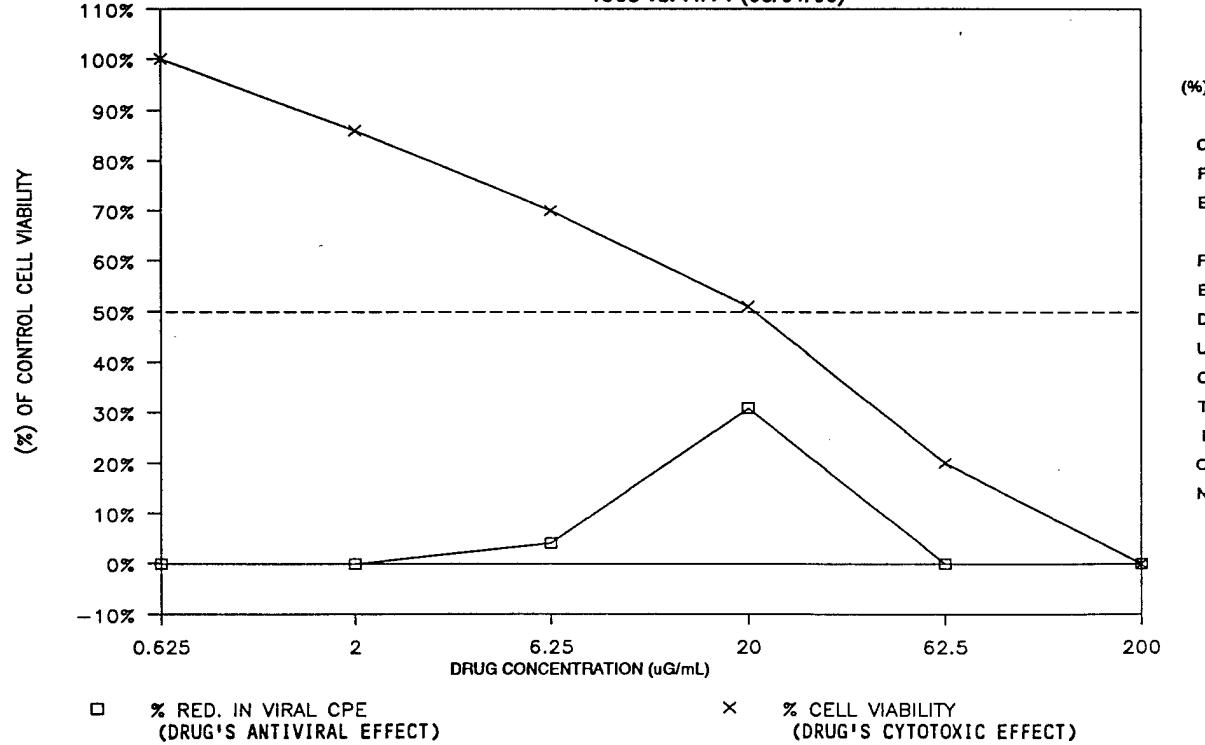


PLATE RG6
DRUG 1964

IN VITRO ANTIVIRAL RESULTS
XTT ASSAY

DRUG: --- 1964
TAI: 0.000000 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.431	0.421	0.397	0.398	0.396	0.405	0.048	0.055	0.052	0.055	0.058	0.062
B		cc/vc					tox	drug 1964 experimental	cc/vc	tox		
C		1.637					1.748	0.786	0.756	0.749	1.462	1.814
D		1.487					1.767	0.696	0.994	0.703	1.663	1.752
E		1.589					0.631	0.424	0.415	0.417	1.681	0.613
F		0.645					0.418	0.408	0.406	0.410	0.742	0.440
G		0.942					0.427	0.428	0.431	0.432	0.879	0.468
H		0.784					0.457	0.427	0.433	0.427	0.742	0.437
colorimetric background												
							0.455	0.434	0.448	0.439	0.418	0.457

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.408	DRUG 1964	25%	50%
VIRUS CONTROL	0.381	TC (μ G/mL)	3.26	4.53
CELL CONTROL	1.179	IC (μ G/mL)	-----	-----
DIFFERENTIAL	0.798	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1964		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES			
ROW ON PLATE	CONC. (μ G/mL)	MEAN O.D.	% RED. IN CPE	MEAN O.D.	% CELL VIABILITY	COLORIMETRIC CONTROL	
low B	0.625	- .074	0%	1.324	100%	0.049	
C	2	- .001	0%	1.342	100%	0.010	
D	6.2	- .401	0%	0.183	16%	0.031	
E	20	- .421	0%	- .019	0%	0.040	
F	62.5	- .385	0%	0.014	1%	0.026	
high G	200	- .407	0%	- .008	0%	0.047	

SUMMARY GRAPH

--- 1964 vs. HIV1 (08/01/00)

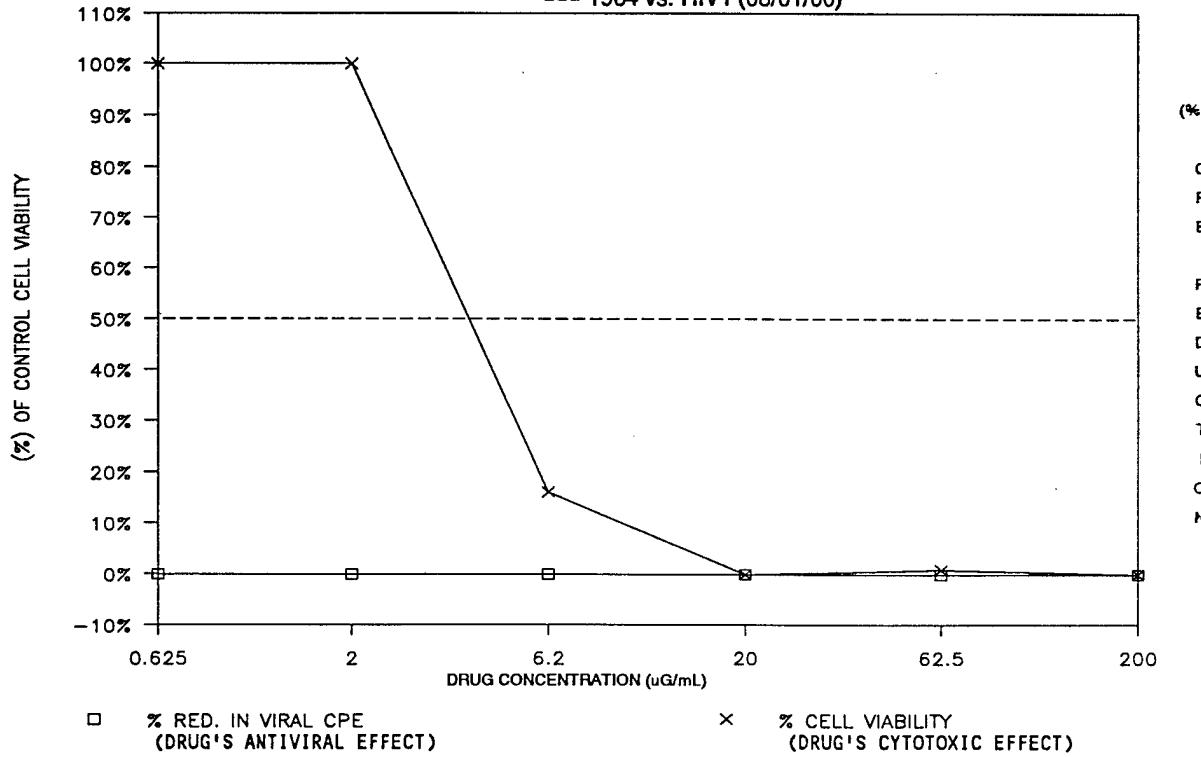


PLATE RG7
DRUG 1965IN VITRO ANTI VIRAL RESULTS
XTT ASSAYDRUG: --- 1965
TAI: >1.70 SI: -----

	1	2	3	4	5	6	7	8	9	10	11	12
reagent background												
A	0.421	0.394	0.398	0.400	0.405	0.411	0.056	0.056	0.057	0.056	0.059	0.063
tox	cc/vc			drug 1965 experimental		tox					cc/vc	
B	1.470	1.554	0.801	0.729	0.729	1.600					1.524	
C	1.578	1.567	0.698	0.734	0.638	1.654					1.631	
D	1.535	1.508	0.674	0.693	0.824	1.587					1.574	
E	1.538	0.585	0.692	0.630	0.687	1.668					0.617	
F	1.475	0.612	0.651	0.641	0.637	1.633					0.646	
G	1.054	0.665	0.782	0.924	0.797	1.341					0.676	
colorimetric background												
H	0.551	0.460	0.452	0.445	0.425	0.446						

tox=cell toxicity

cc=cell control

vc=virus control

BOLD = highest drug conc

values shown are optical densities

VIRUS	HIV1	PASSAGE --	PROJECT #	--
CELLS	CEMSS	PASSAGE --	SPONSOR	WALTERREED
SHIPMENT NUMBER	--	OPERATOR KMW	TEST DATE	08/01/00
STRN	RF		DATE READ	08/01/00
REAGENT	0.405	DRUG 1965	25%	50%
VIRUS CONTROL	0.229	TC (uG/mL)	133.00	> 200.00
CELL CONTROL	1.155	IC (uG/mL)	-----	-----
DIFFERENTIAL	0.926	ANTIVIRAL INDEX (AI)	-----	-----

DRUG 1965		ANTIVIRAL TEST VALUES		CYTOTOXICITY TEST VALUES		COLORIMETRIC CONTROL
ROW ON PLATE	CONC. (uG/mL)	MEAN O.D.	% RED. IN VIRAL CPE	MEAN O.D.	% CELL VIABILITY	
low B	0.625	0.079	9%	1.089	94%	0.041
C	2	0.037	4%	1.191	100%	0.020
D	6.25	0.057	6%	1.116	97%	0.040
E	20	- .011	0%	1.151	100%	0.047
F	62.5	- .045	0%	1.094	95%	0.055
high G	200	0.055	6%	0.647	56%	0.146

SUMMARY GRAPH

--- 1965 vs. HIV1 (08/01/00)

